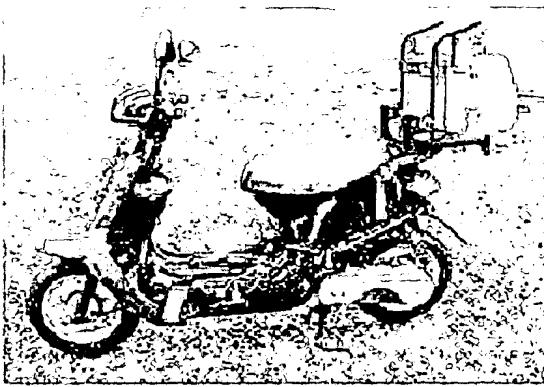
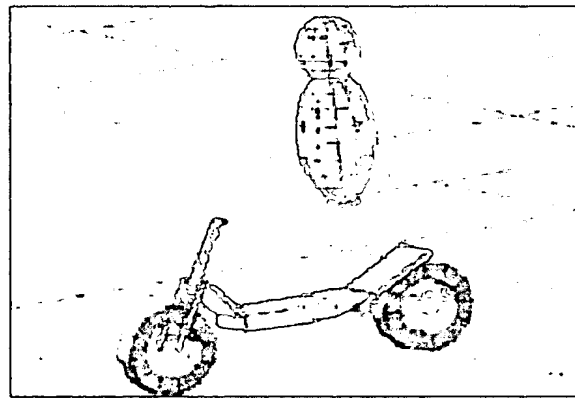


Figure 1

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(a)



(b)

*Figure 2*

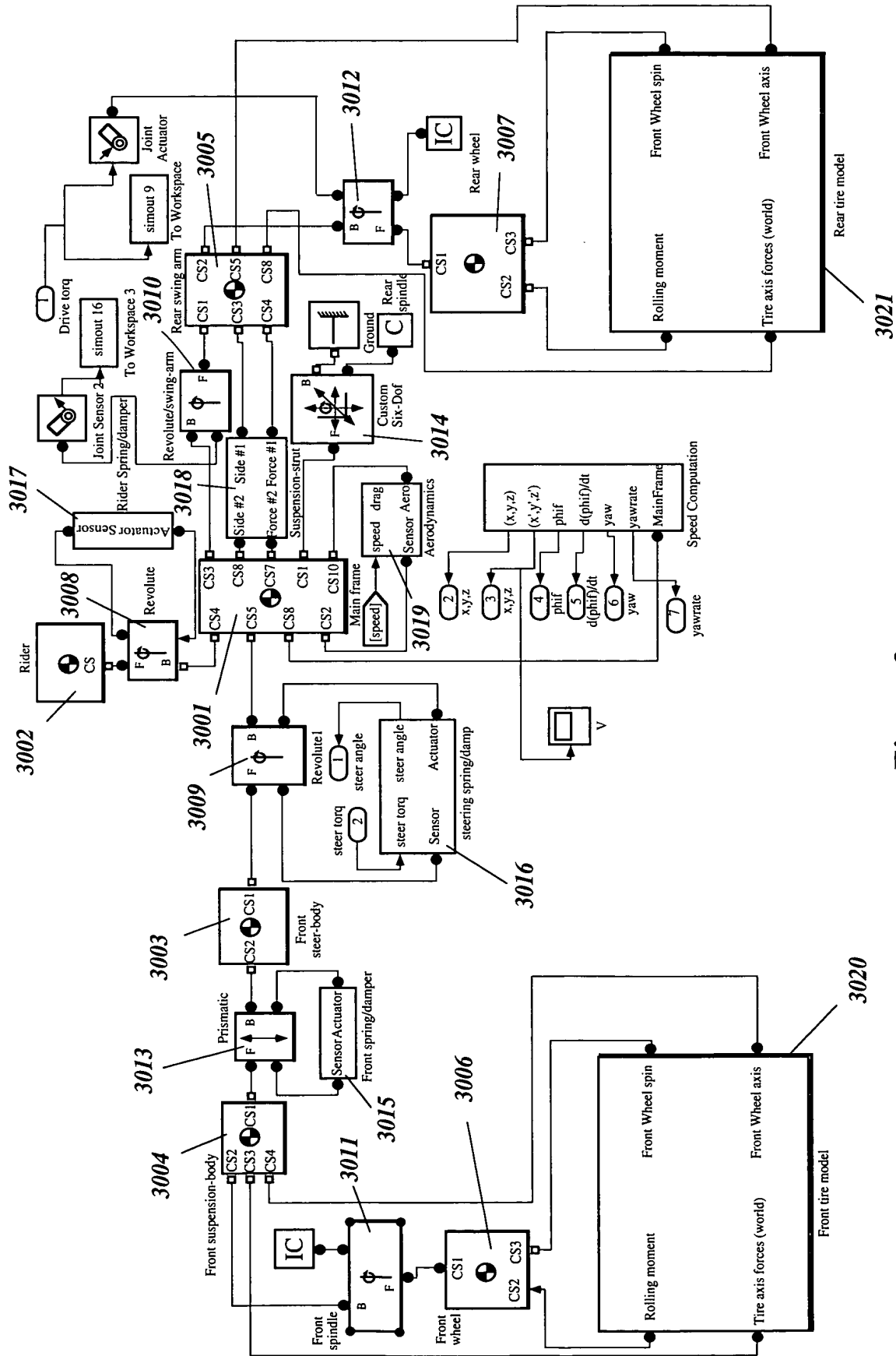


Figure 3

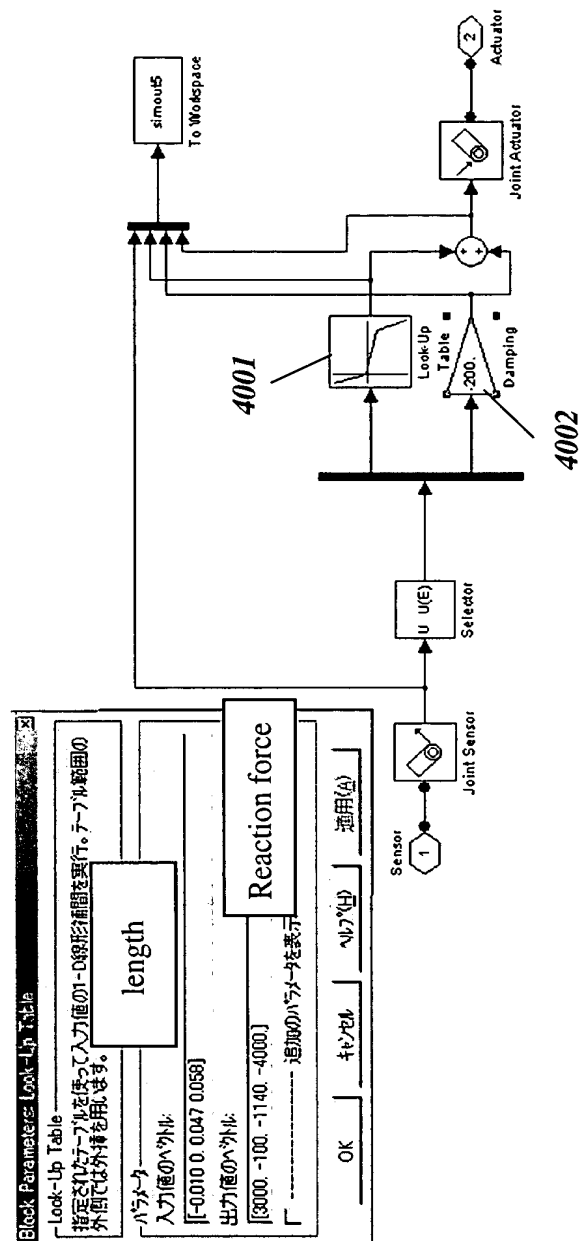


Figure 4

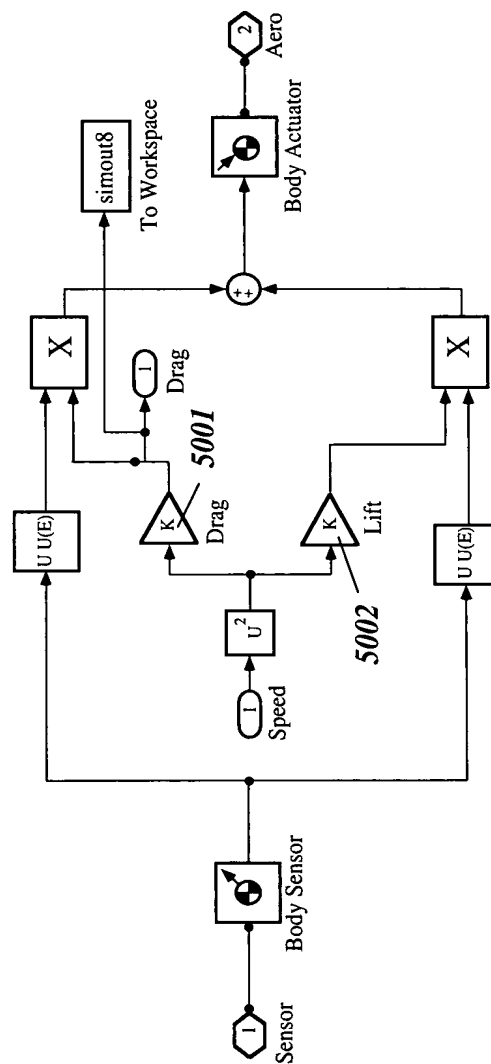
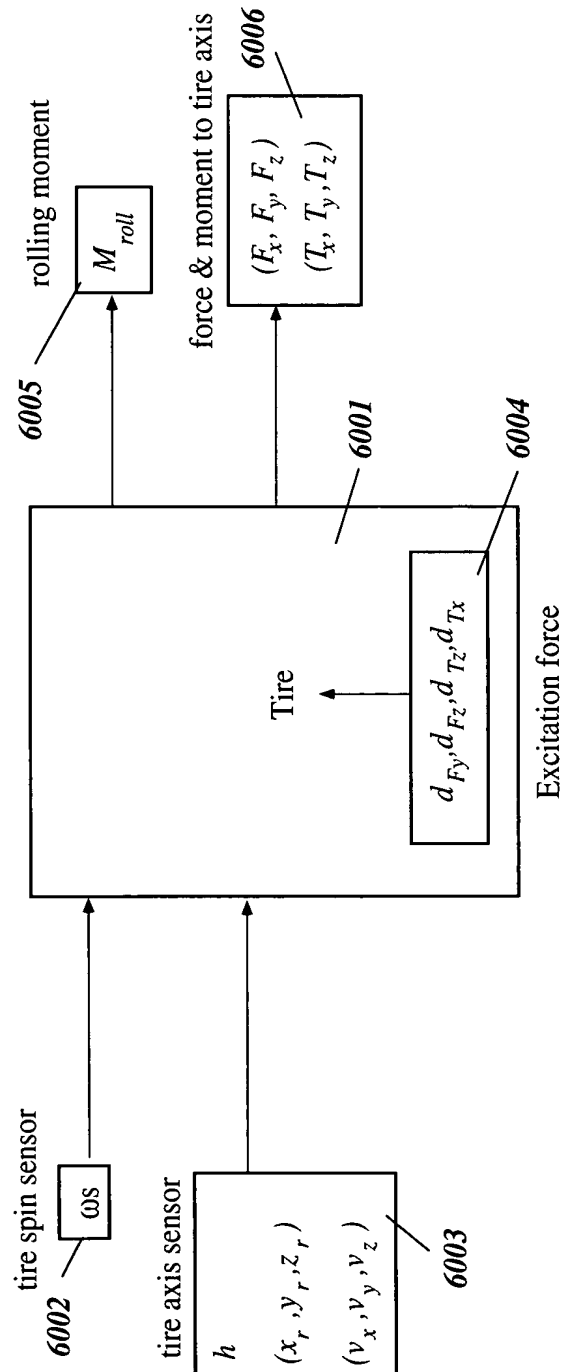


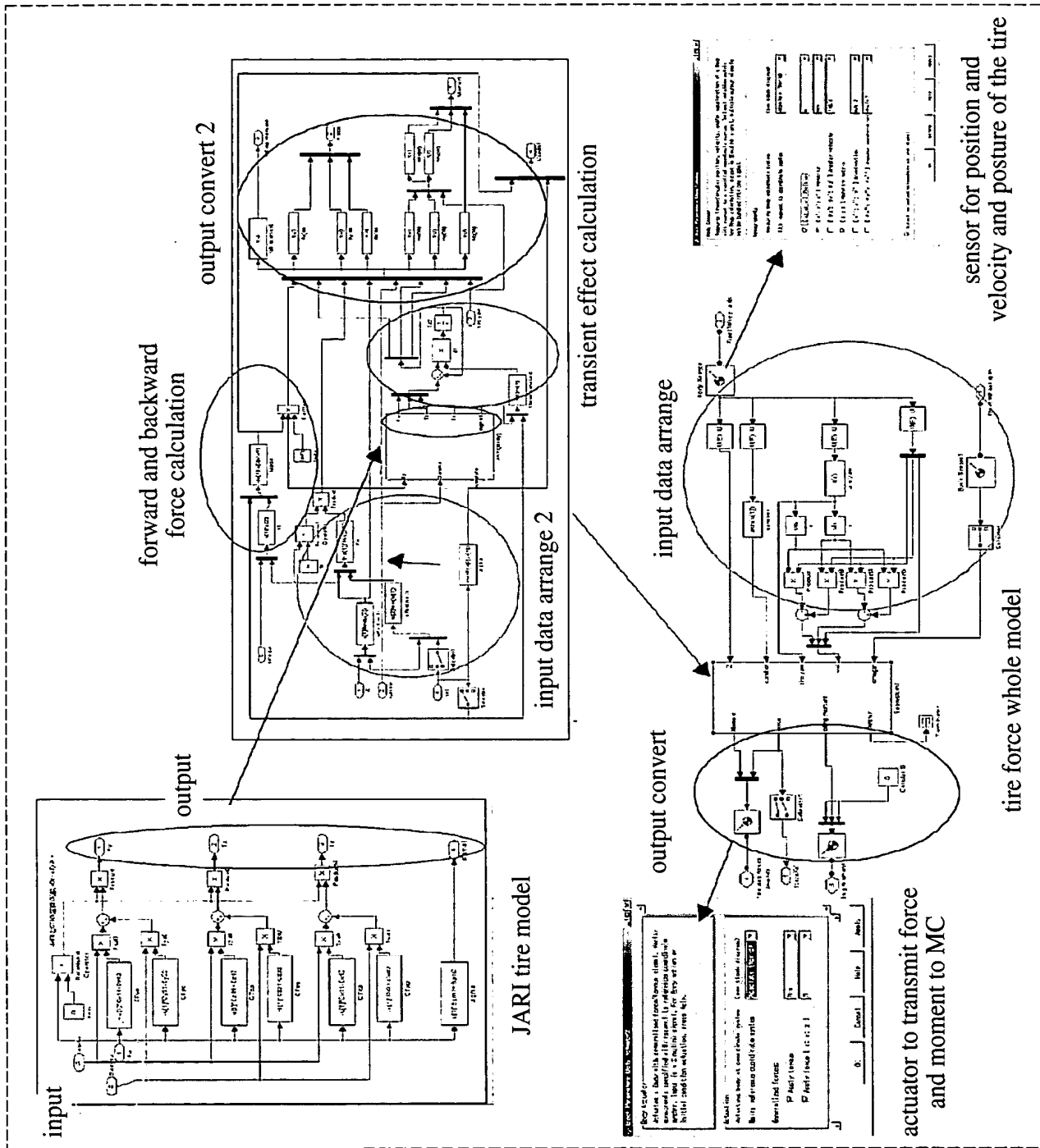
Figure 5



**Figure 6**



**Figure 7**

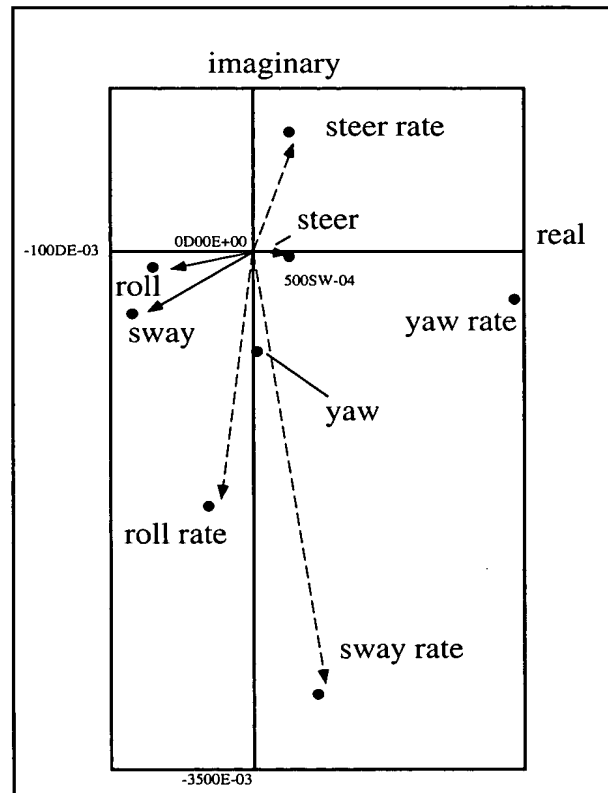


(b)

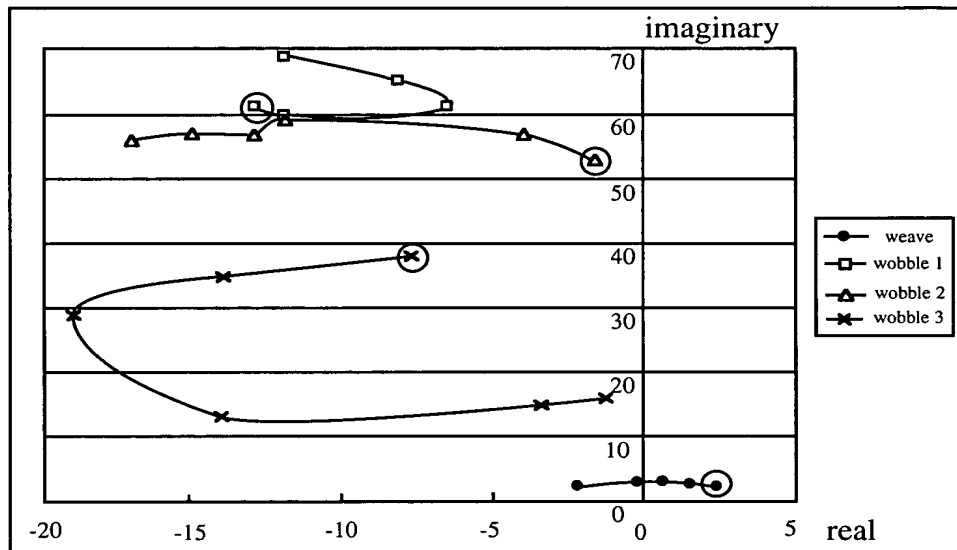
Figure 8

tire_data.m		(a)	
1	% coefficient	2	
2	1/10	3	% time radius
3	1/10	4	1/10
4	1/10	5	% time radius
5	1/10	6	1/10
6	1/10	7	% time radius
7	1/10	8	1/10
8	1/10	9	% time radius
9	1/10	10	1/10
10	1/10	11	% time radius
11	1/10	12	1/10
12	1/10	13	% time radius
13	1/10	14	1/10
14	1/10	15	% time radius
15	1/10	16	1/10
16	1/10	17	% time radius
17	1/10	18	1/10
18	1/10	19	% time radius
19	1/10	20	1/10
20	1/10	21	% time radius
21	1/10	22	1/10
22	1/10	23	% time radius
23	1/10	24	1/10
24	1/10	25	% time radius
25	1/10	26	1/10
26	1/10	27	% time radius
27	1/10	28	1/10
28	1/10	29	% time radius
29	1/10	30	1/10
30	1/10	31	% time radius
31	1/10	32	1/10
32	1/10	33	% time radius
33	1/10	34	1/10
34	1/10	35	% time radius
35	1/10	36	1/10
36	1/10	37	% time radius
37	1/10	38	1/10
38	1/10	39	% time radius
39	1/10	40	1/10
40	1/10	41	% time radius
41	1/10	42	1/10
42	1/10	43	% time radius
43	1/10	44	1/10
44	1/10	45	% time radius
45	1/10	46	1/10
46	1/10	47	% time radius
47	1/10	48	1/10
48	1/10	49	% time radius
49	1/10	50	1/10

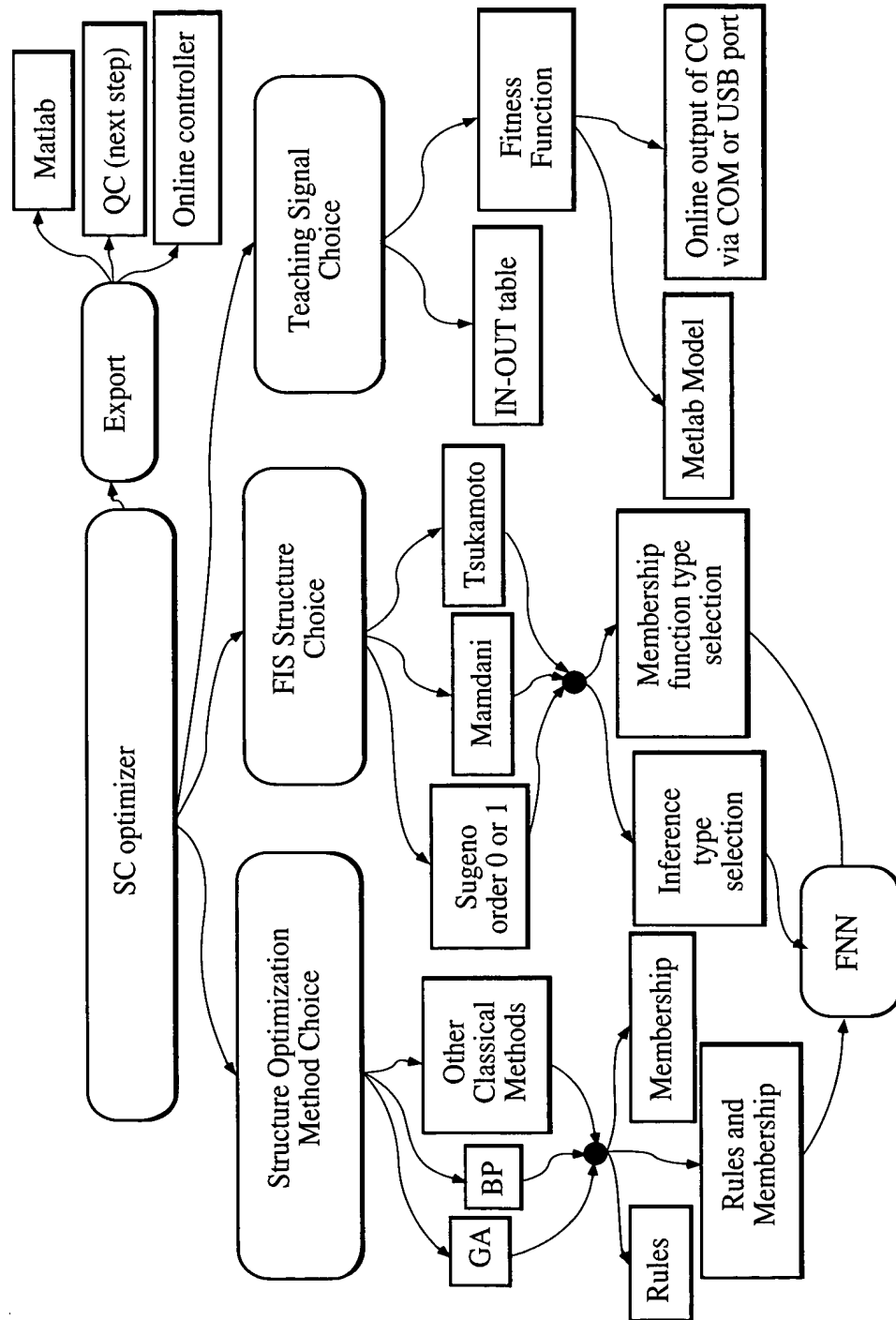




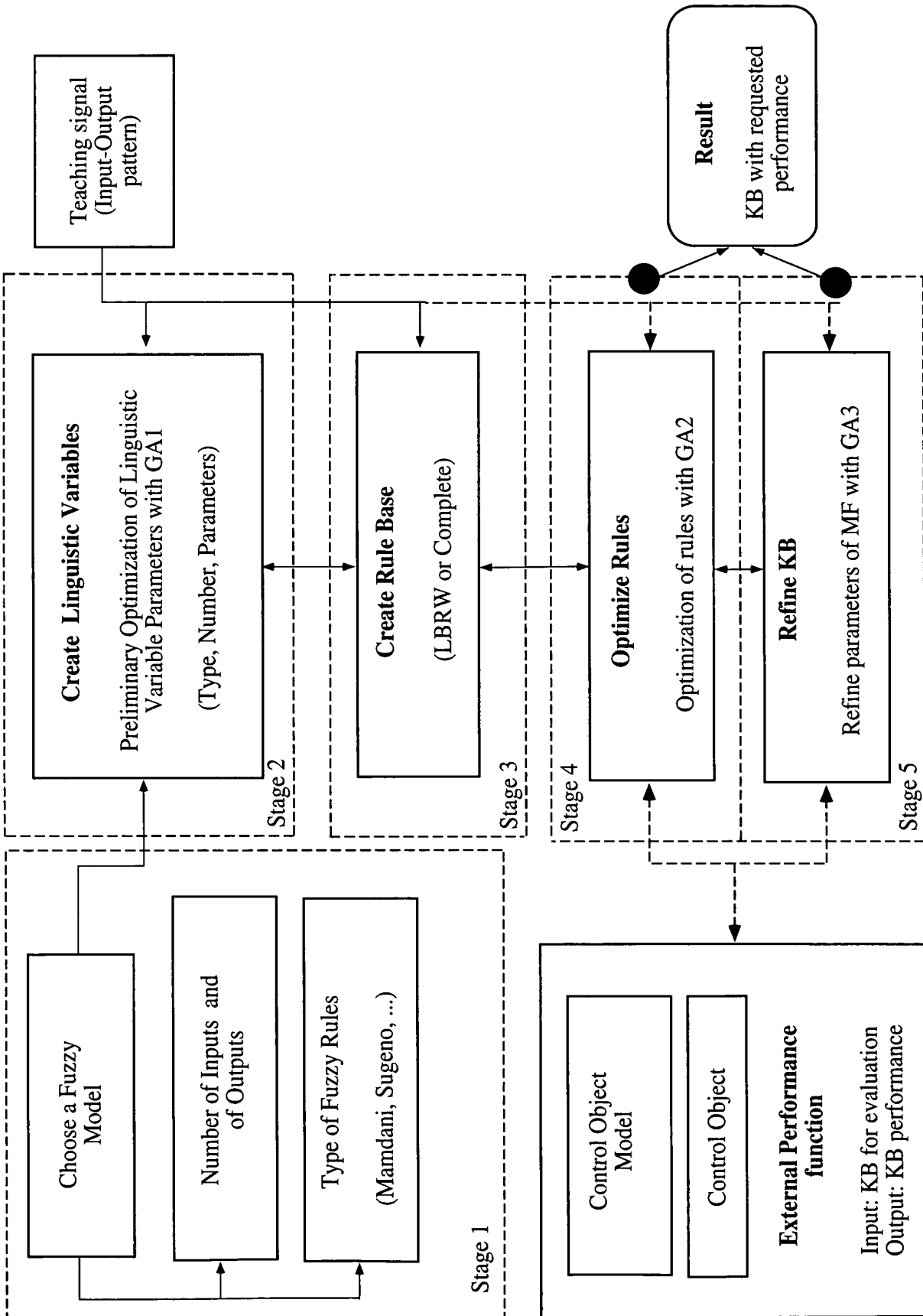
*Figure 9*



*Figure 10*



*Figure 11*



*Figure 12A*

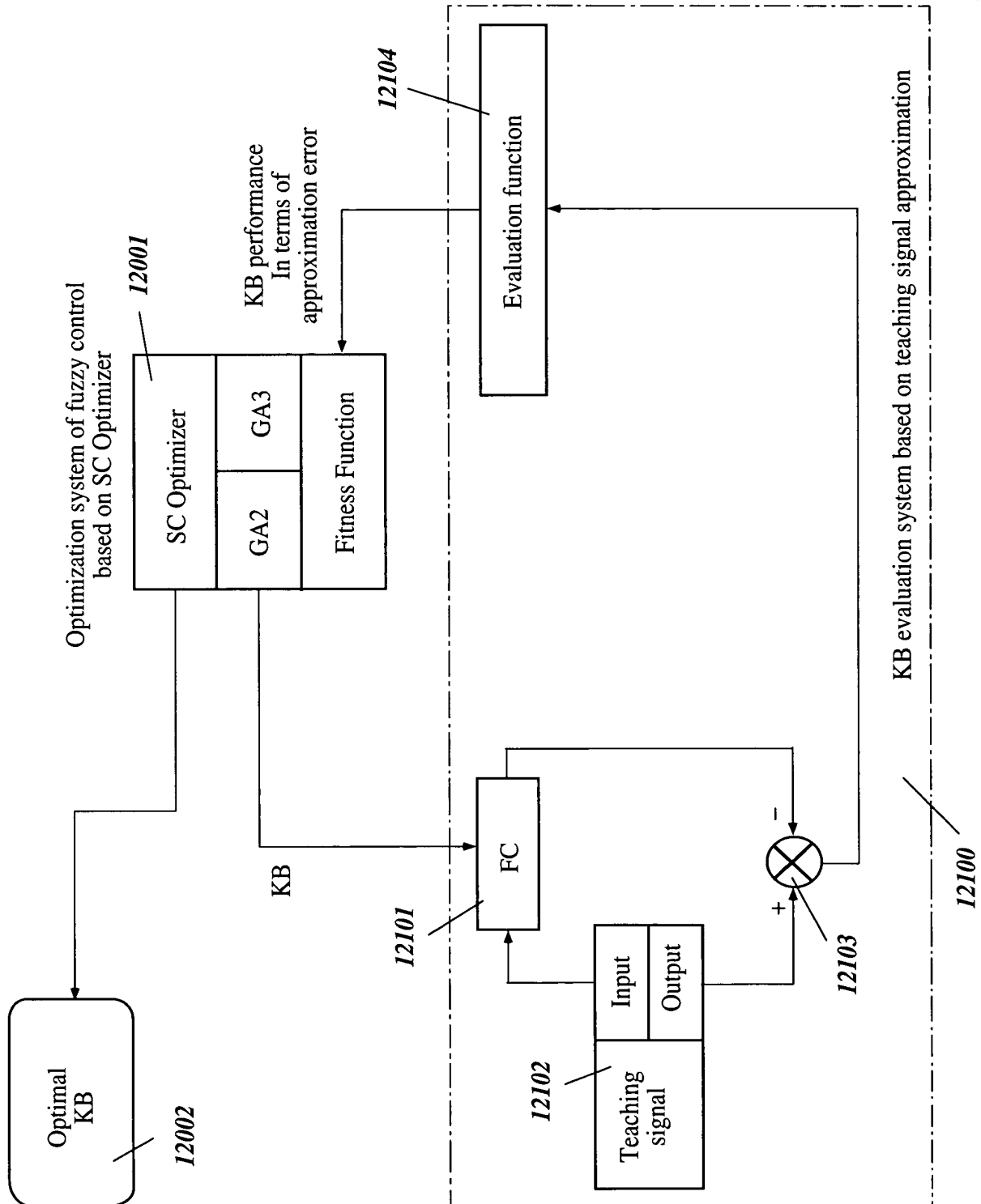


Figure 12B

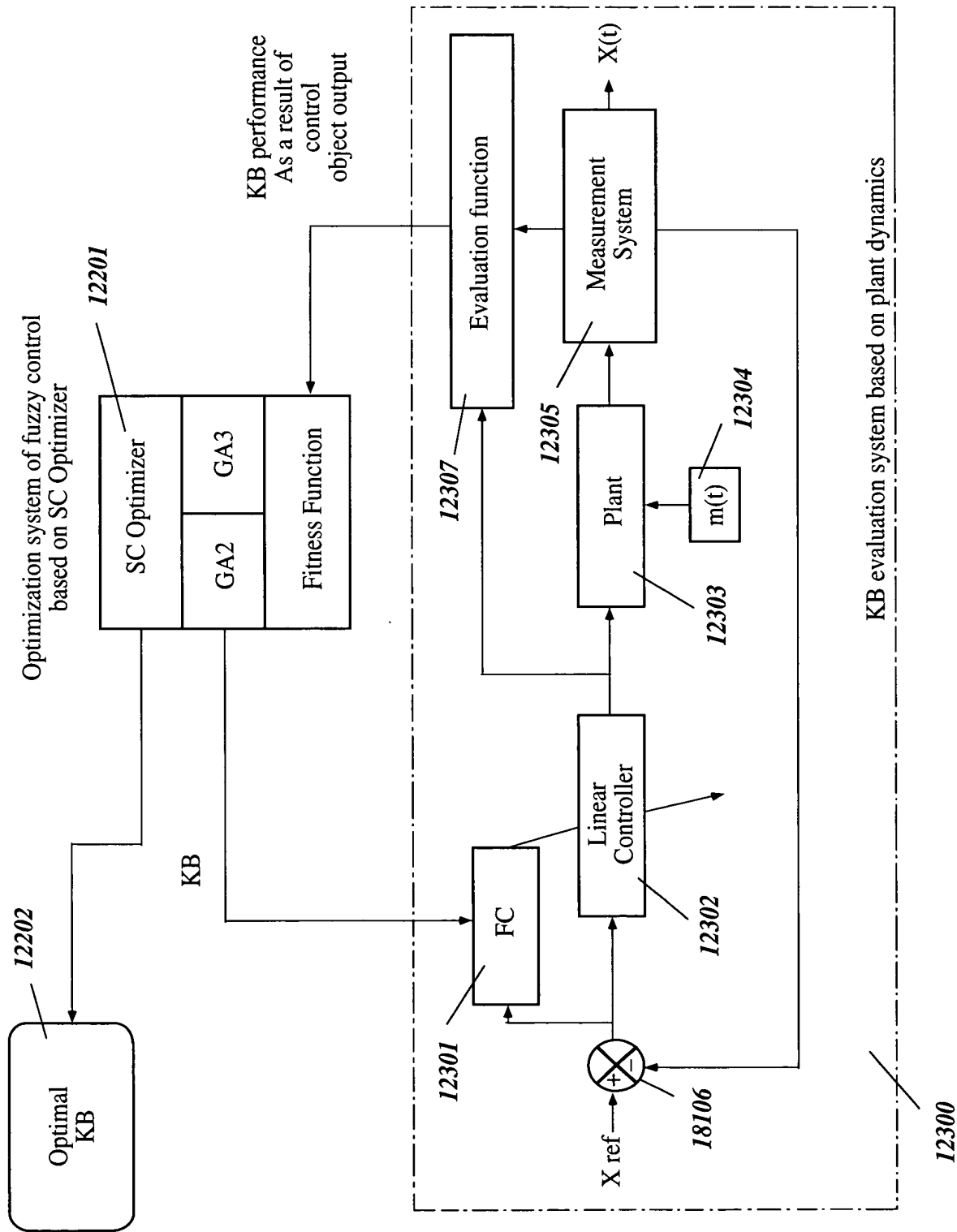


Figure 12 C

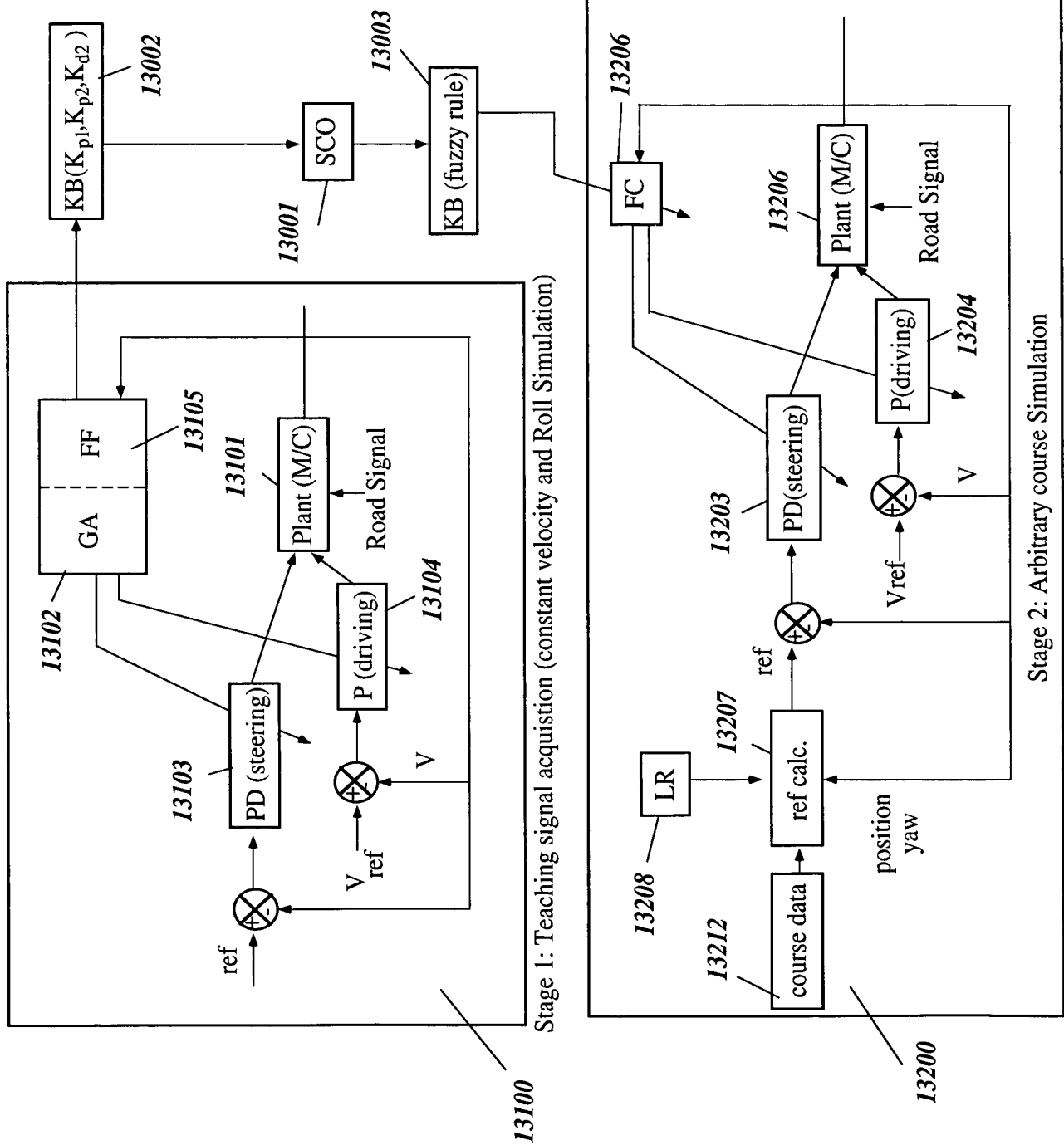


Figure 13

[illegible]



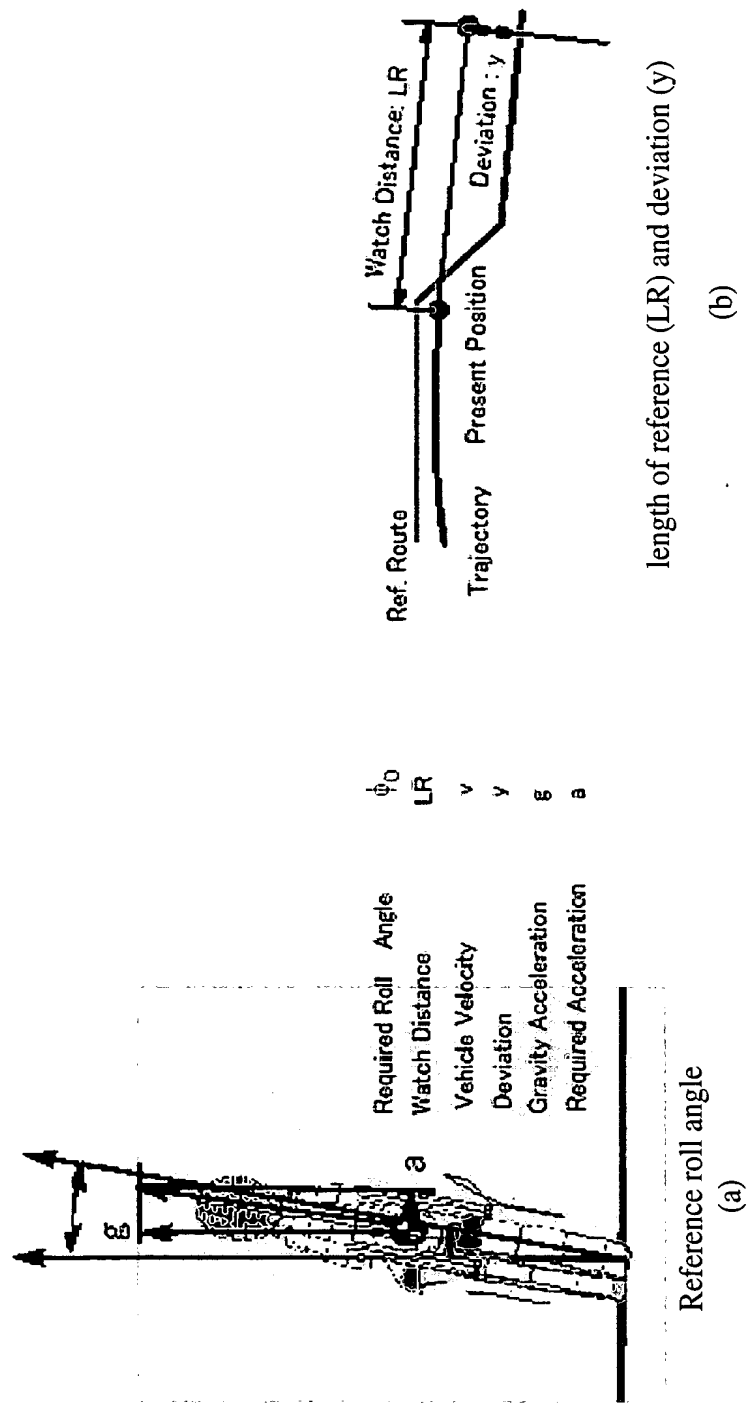
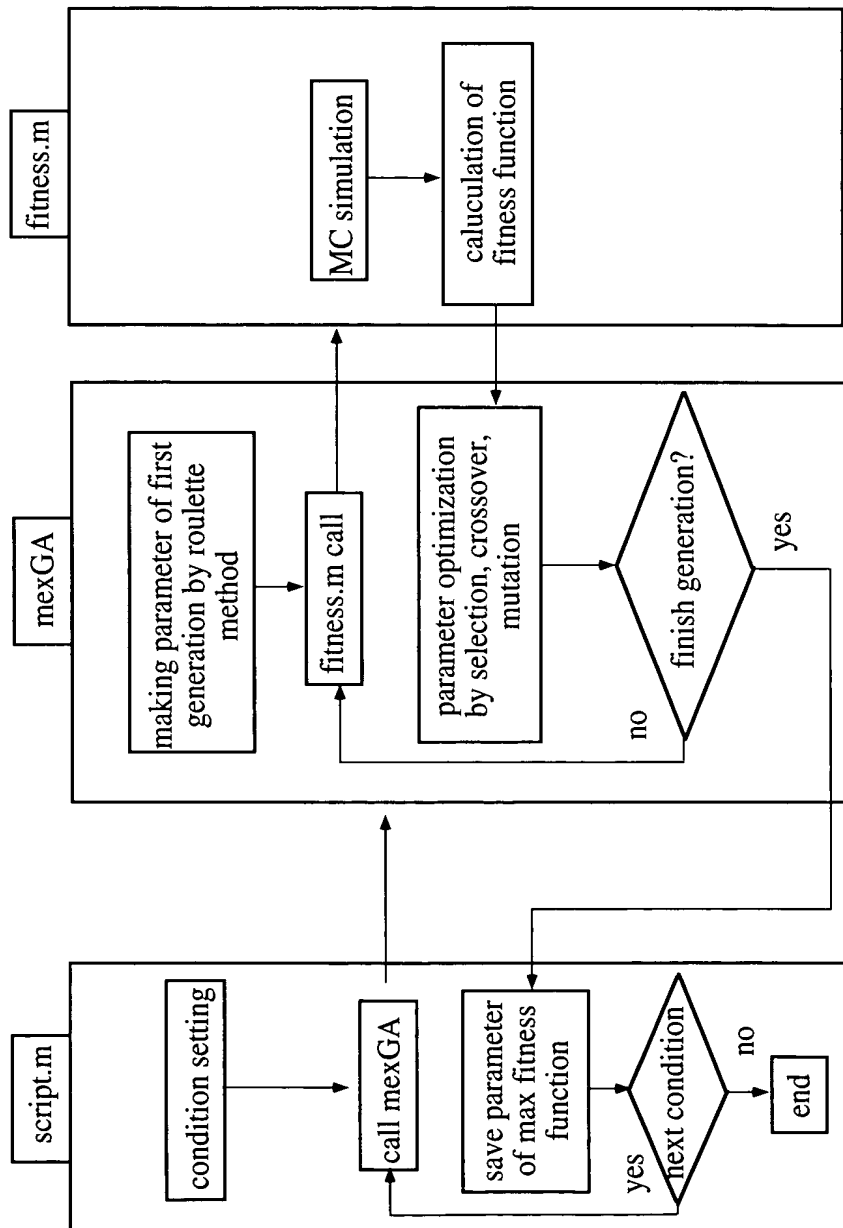


Figure 15



*Figure 16*

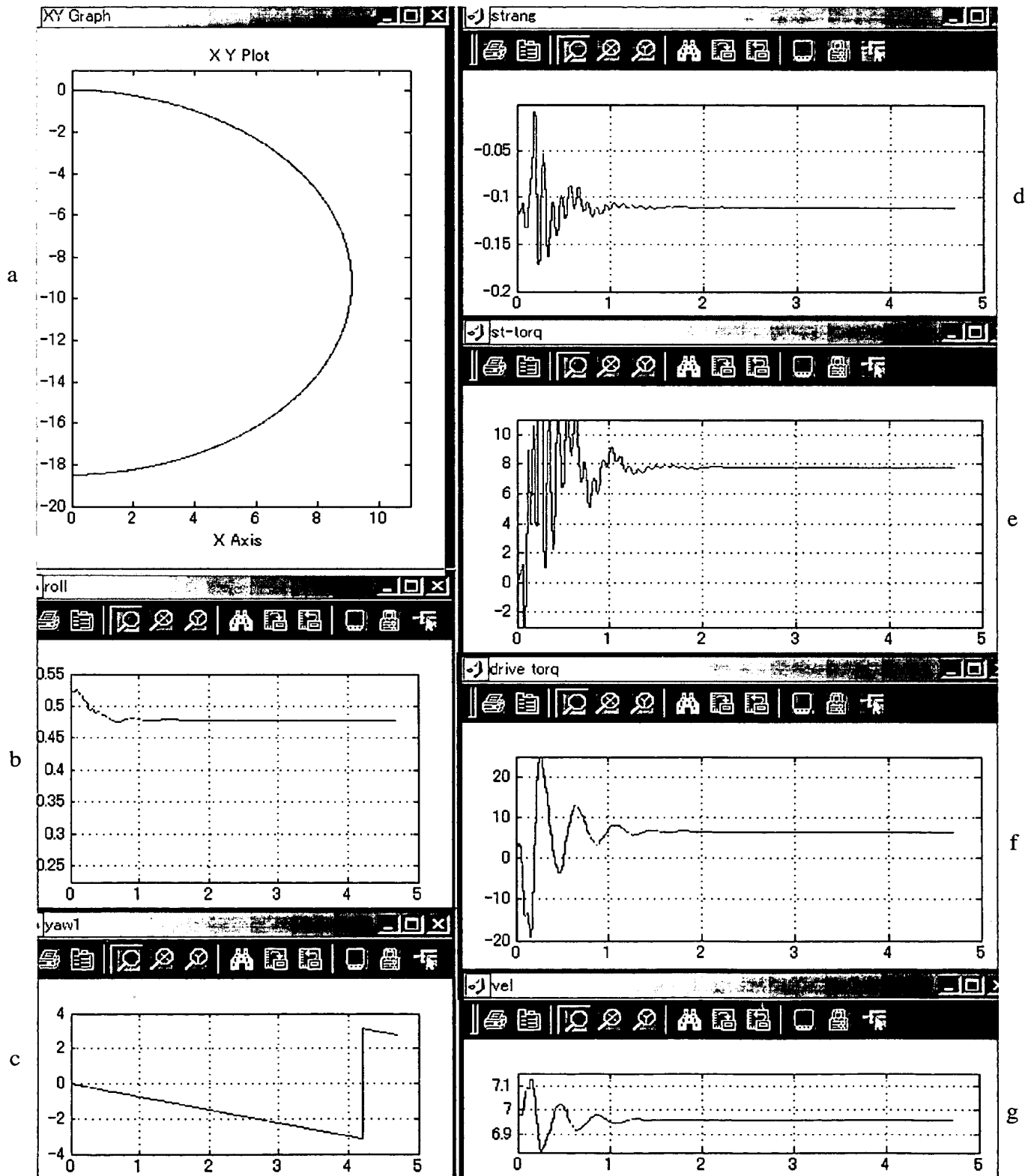
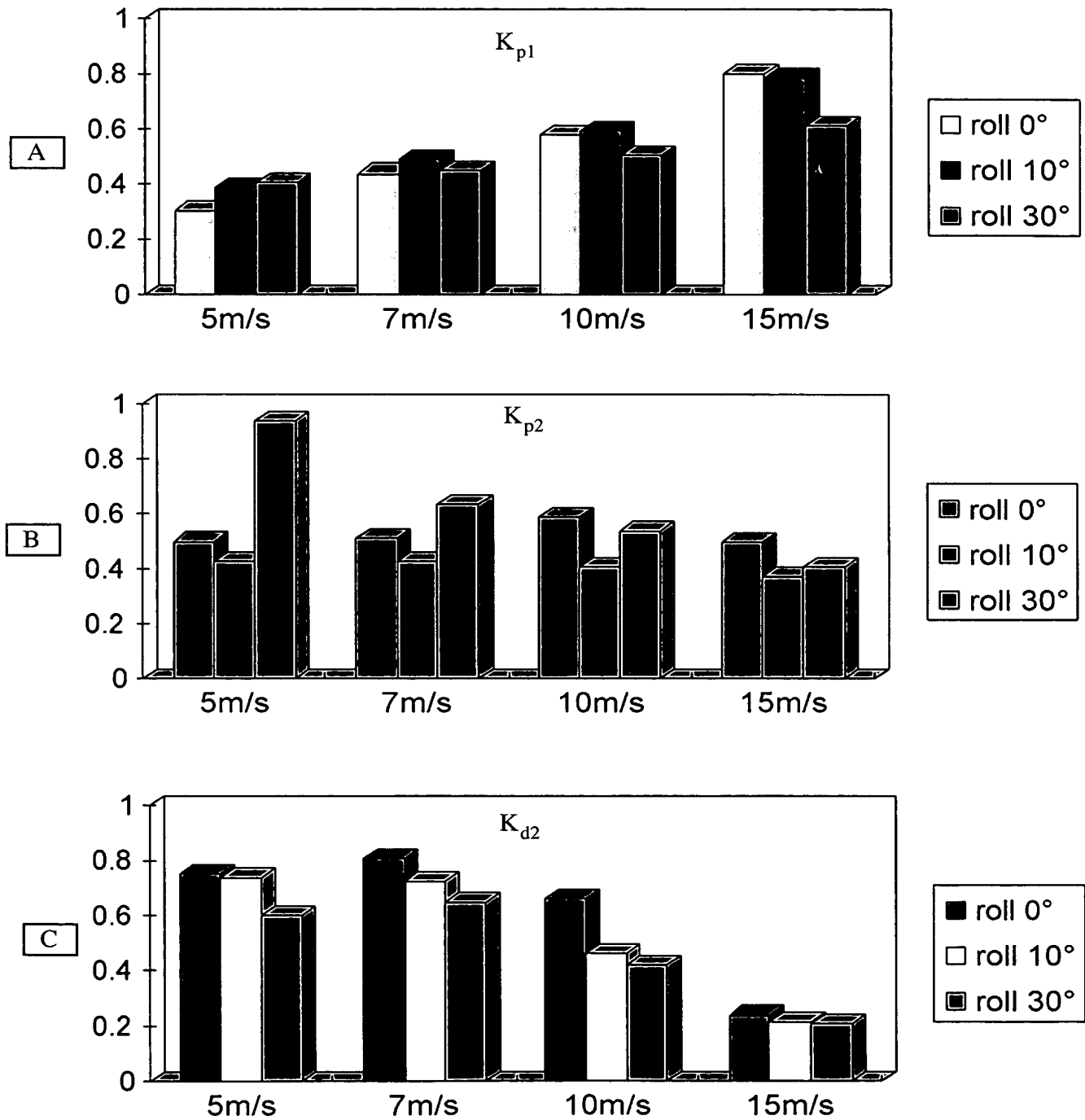
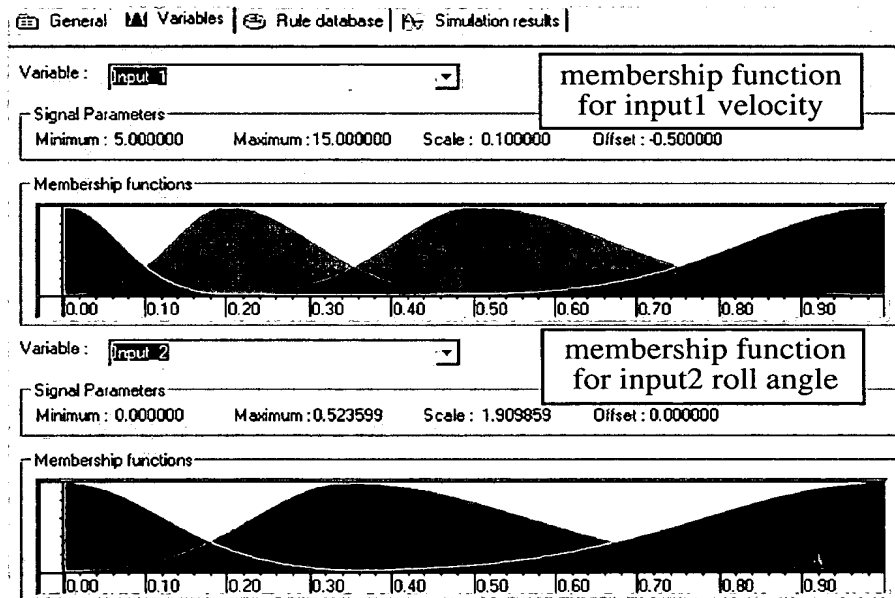


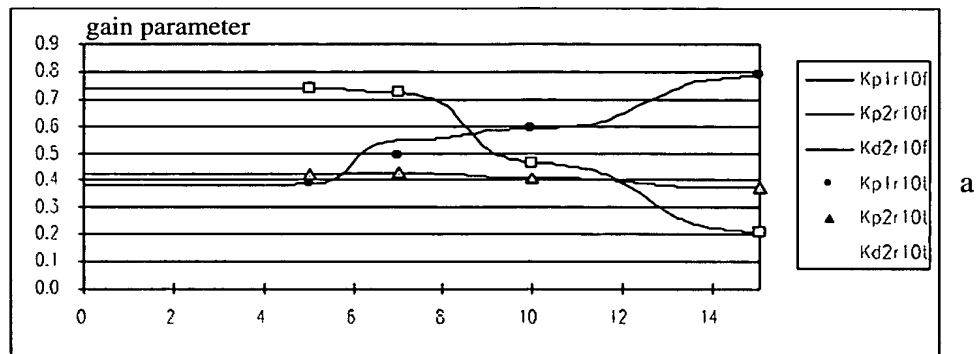
Figure 17



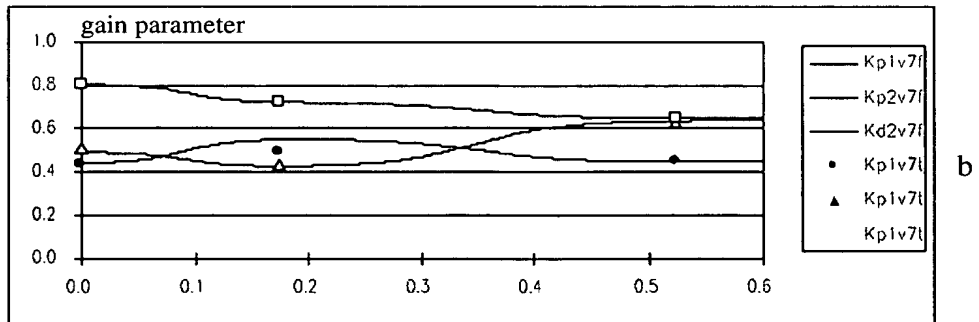
*Figure 18*



*Figure 19*



Lines: Fuzzy controller output (roll 10 deg)  
point: Teaching signal (roll 10 deg)



Lines: Fuzzy controller output (vel. 7 m/s)  
point: Teaching signal (vel. 7 m/s)

**Figure 20**

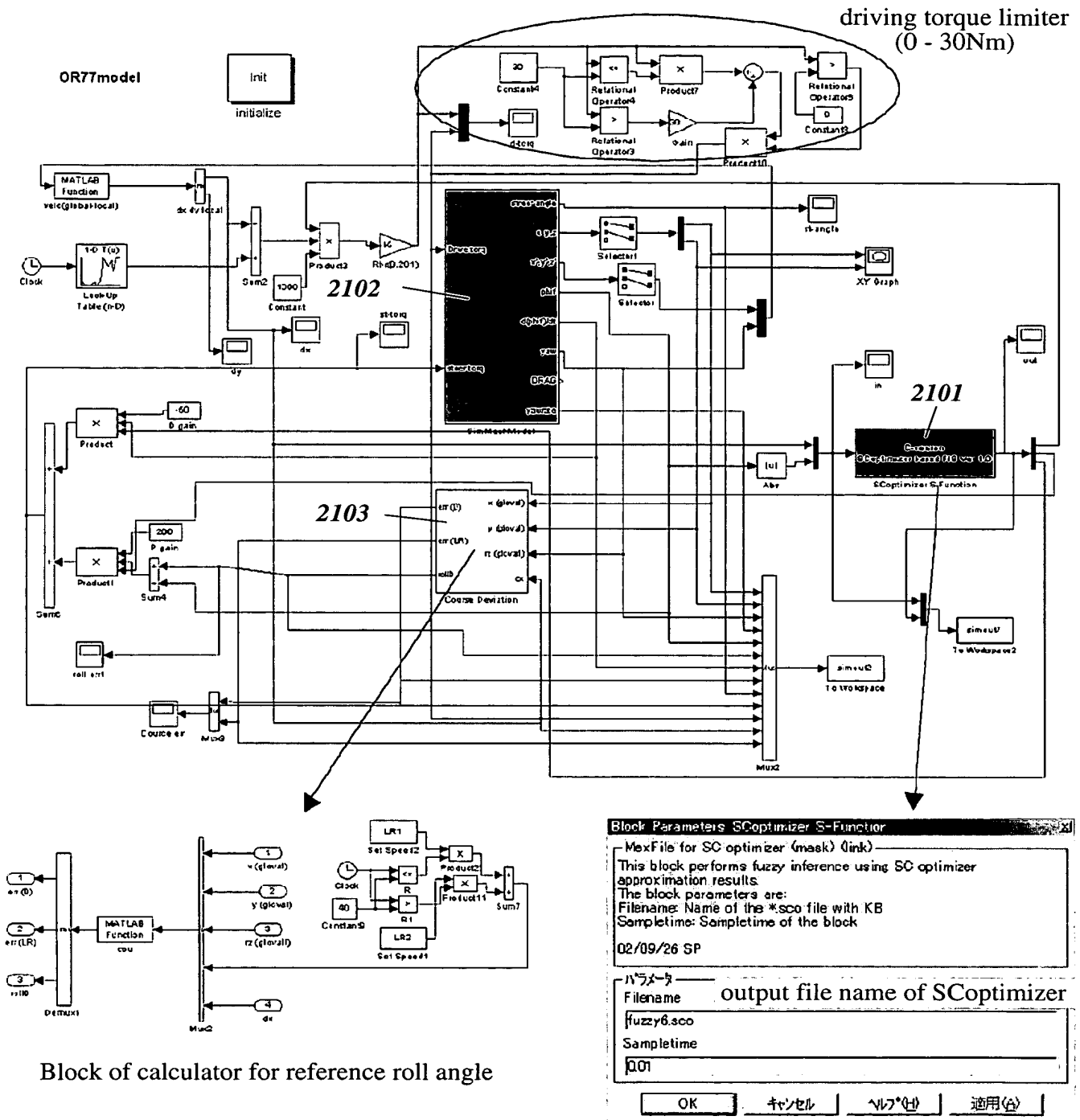
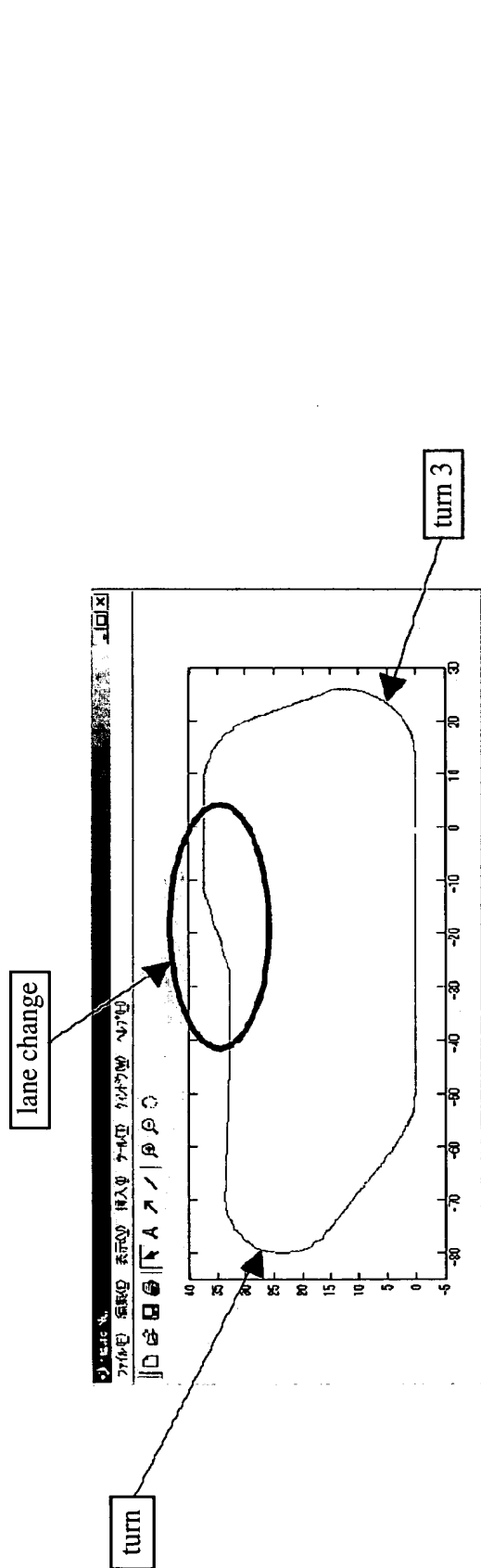
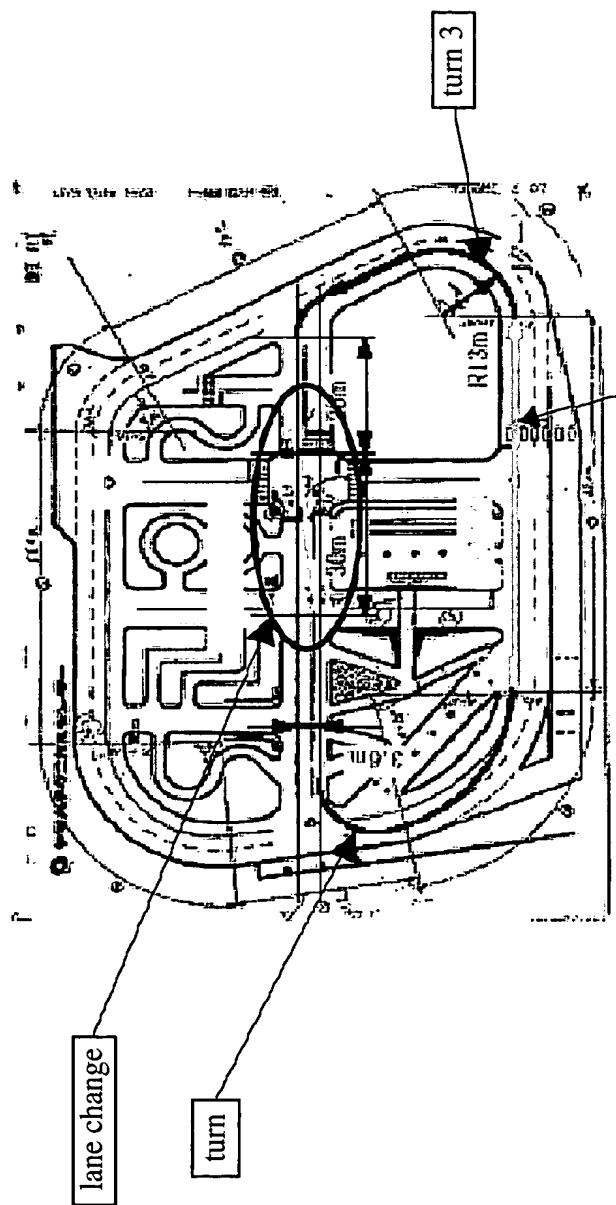


Figure 21



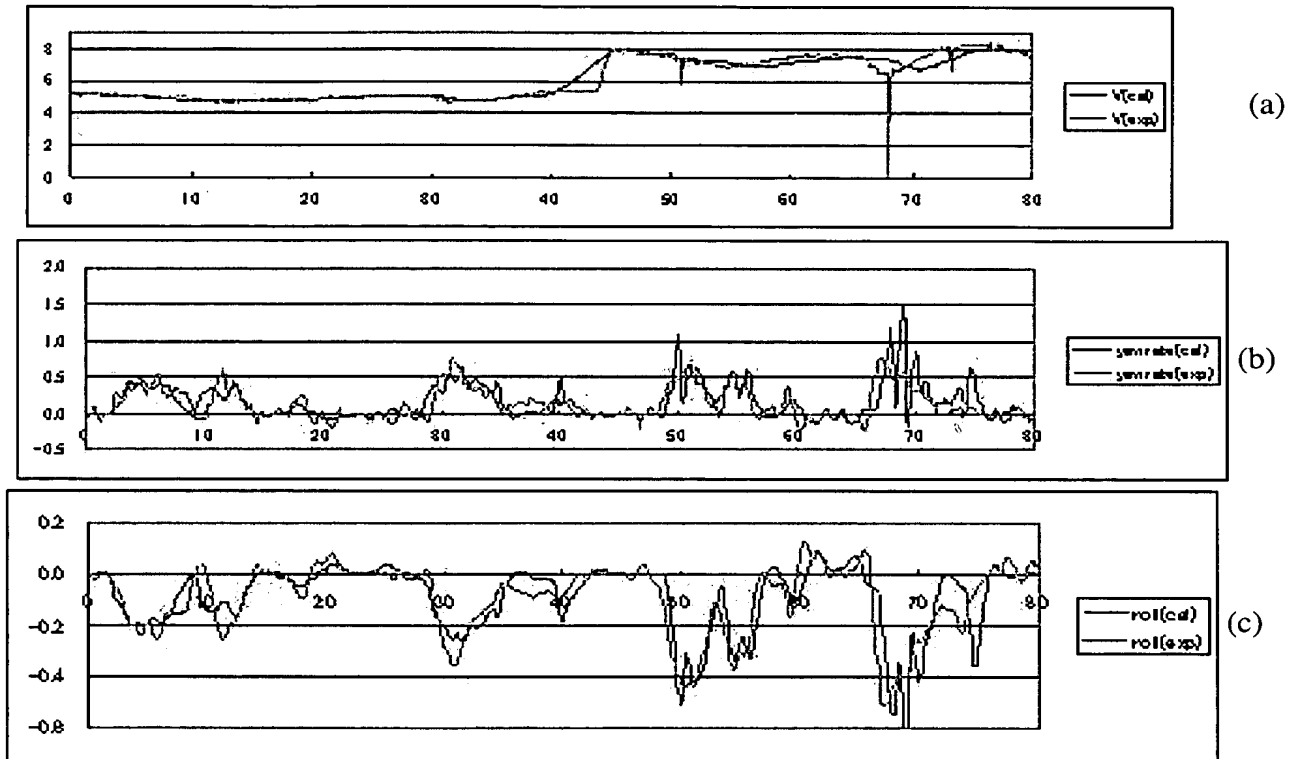
(a) the simulation course



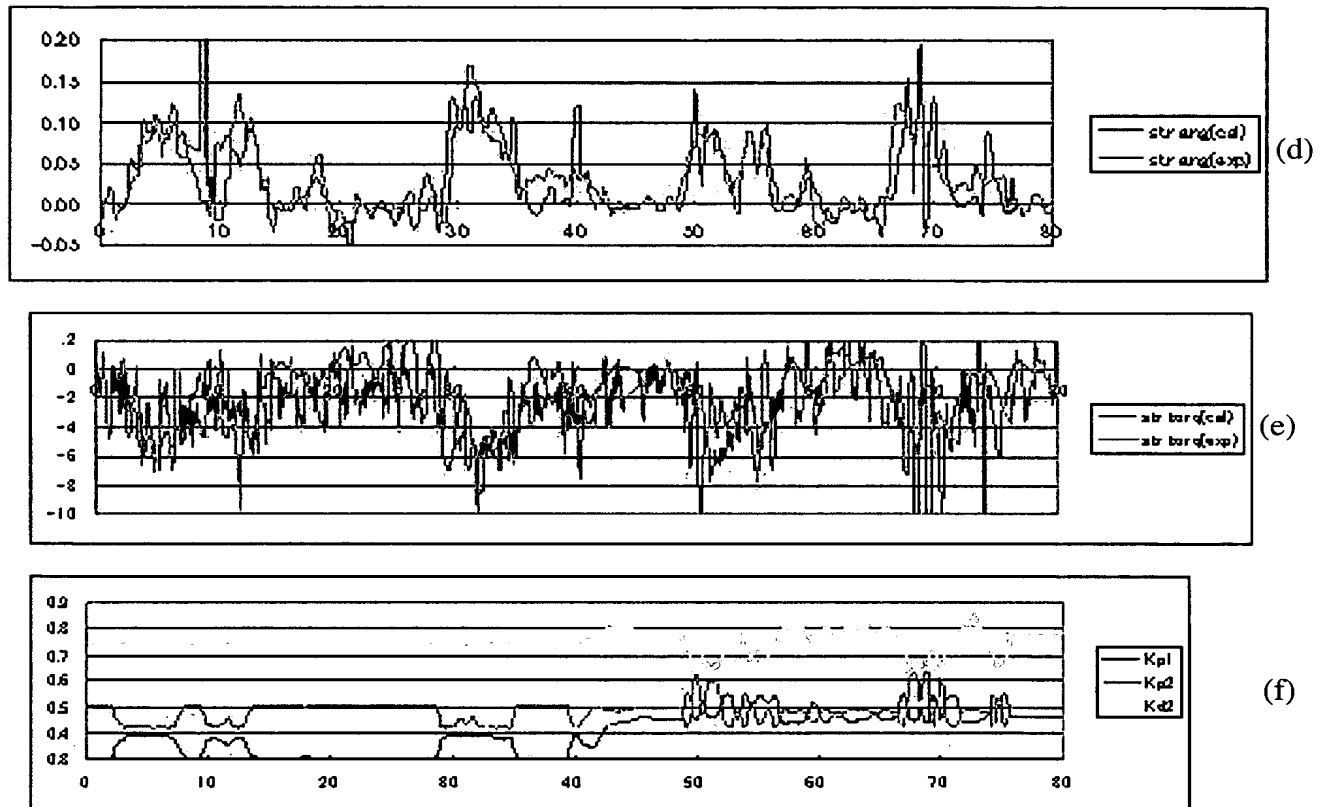
(b) the map of the actual test course

Figure 22

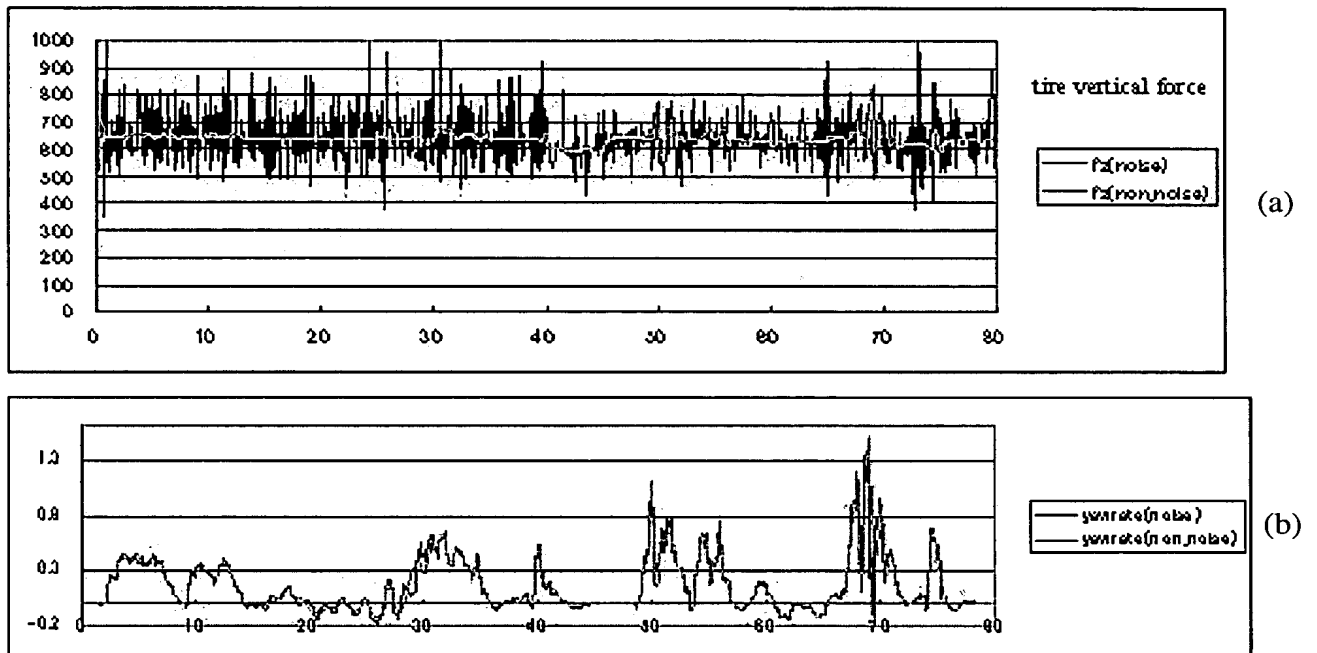




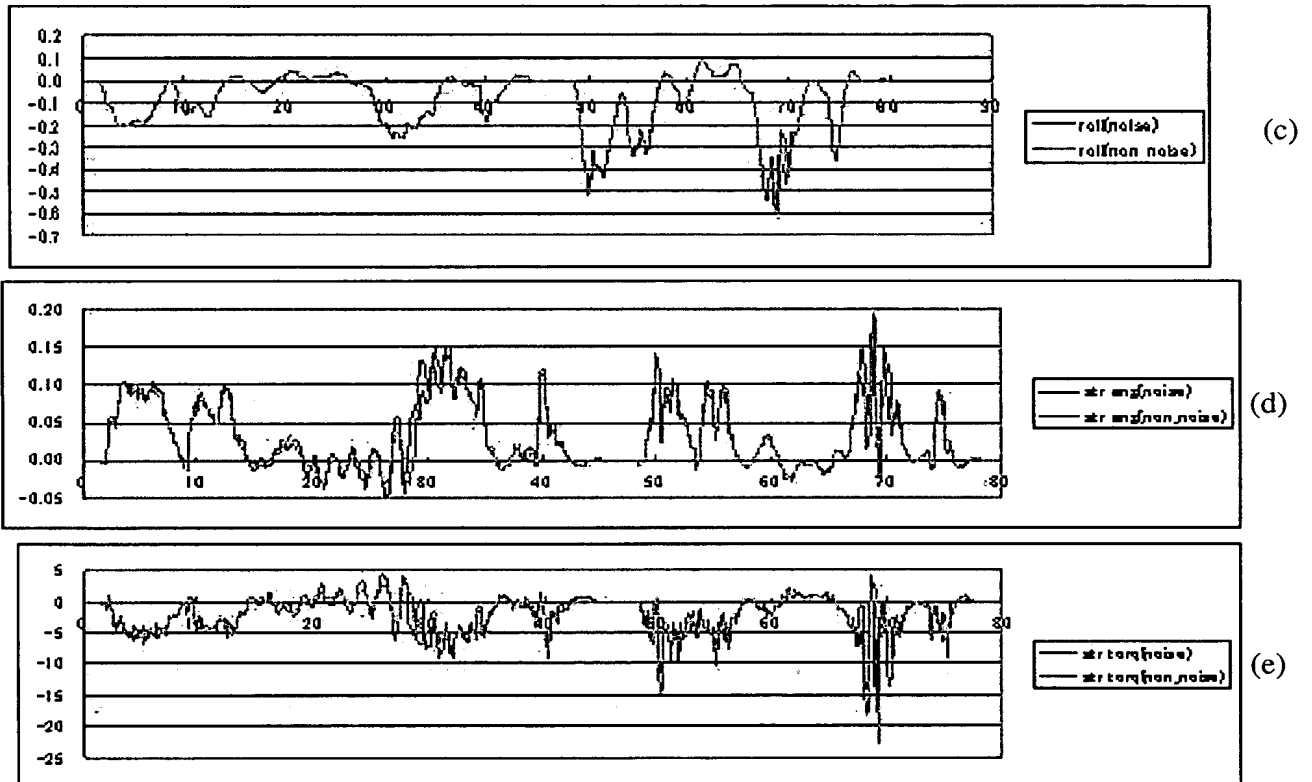
**Figure 23**  
(a-c from above)



**Figure 23**  
(d-f from above)

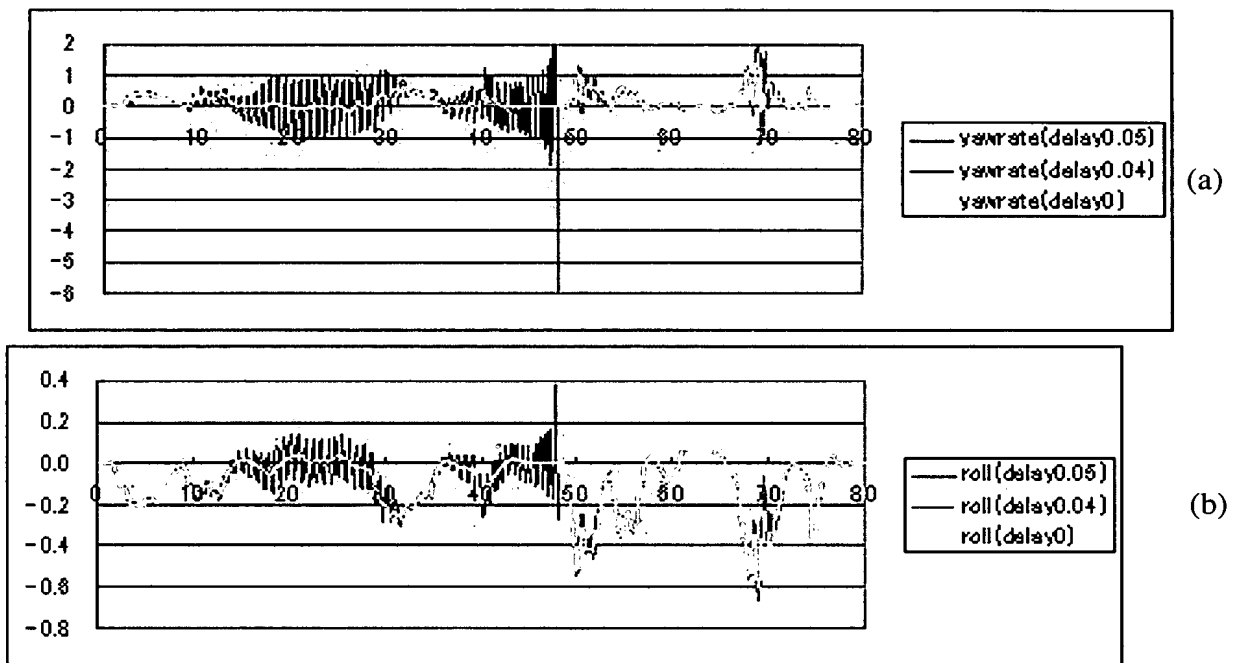


**Figure 24**  
(a-b from above)

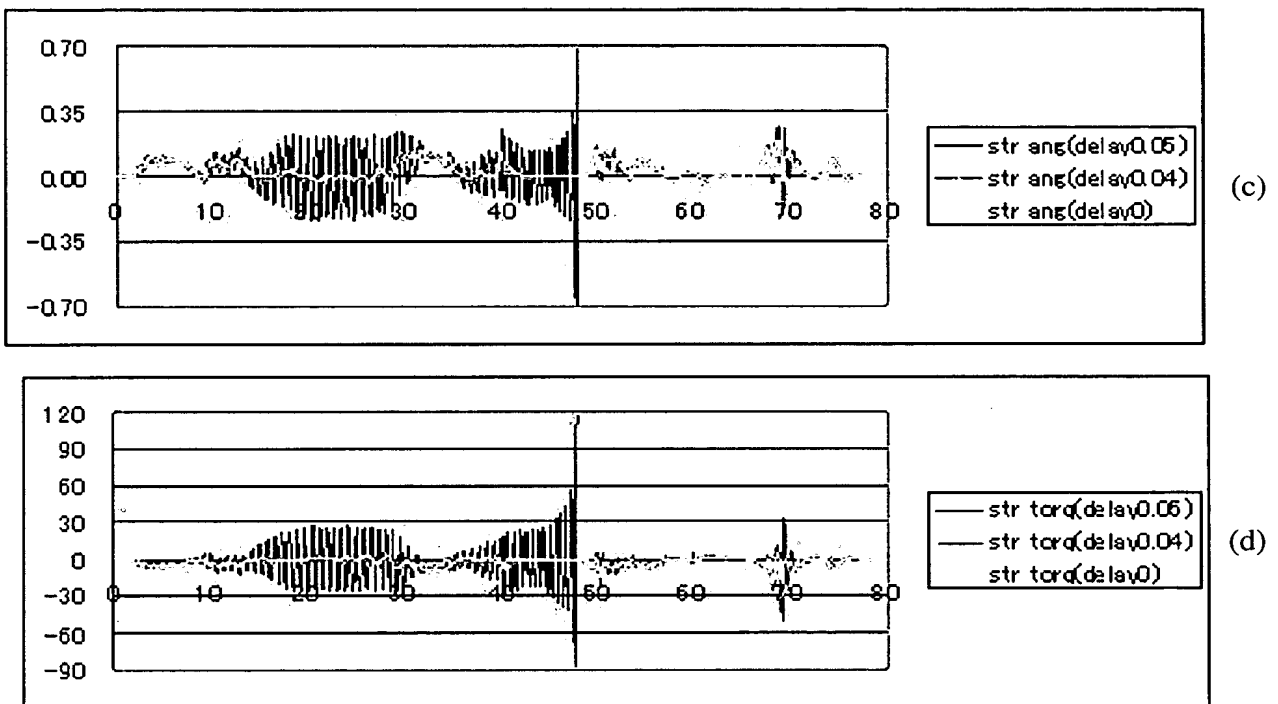


**Figure 24**

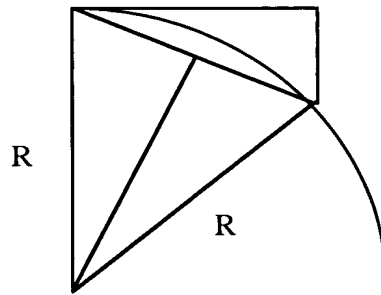
(c-e from above)



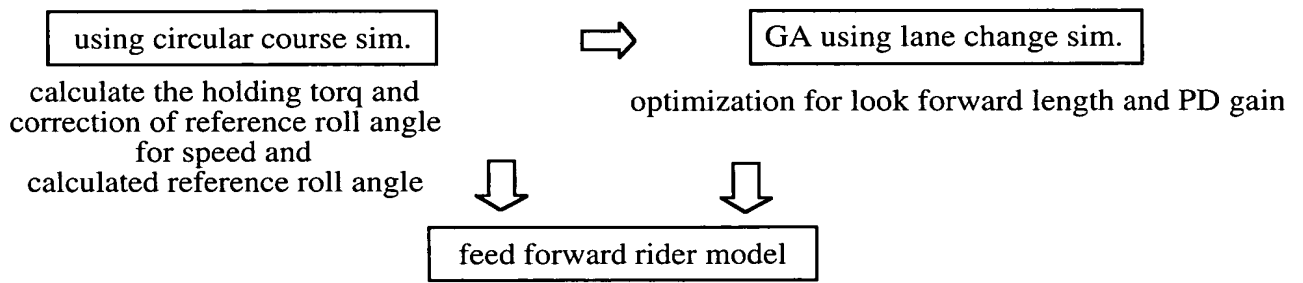
**Figure 25**  
(a-b from above)



**Figure 25**  
(c-d from above)



(a) Relation between  
deviation of course at length of reference  
and turning radius



(b) Process of making feed forward rider model

**Figure 26**

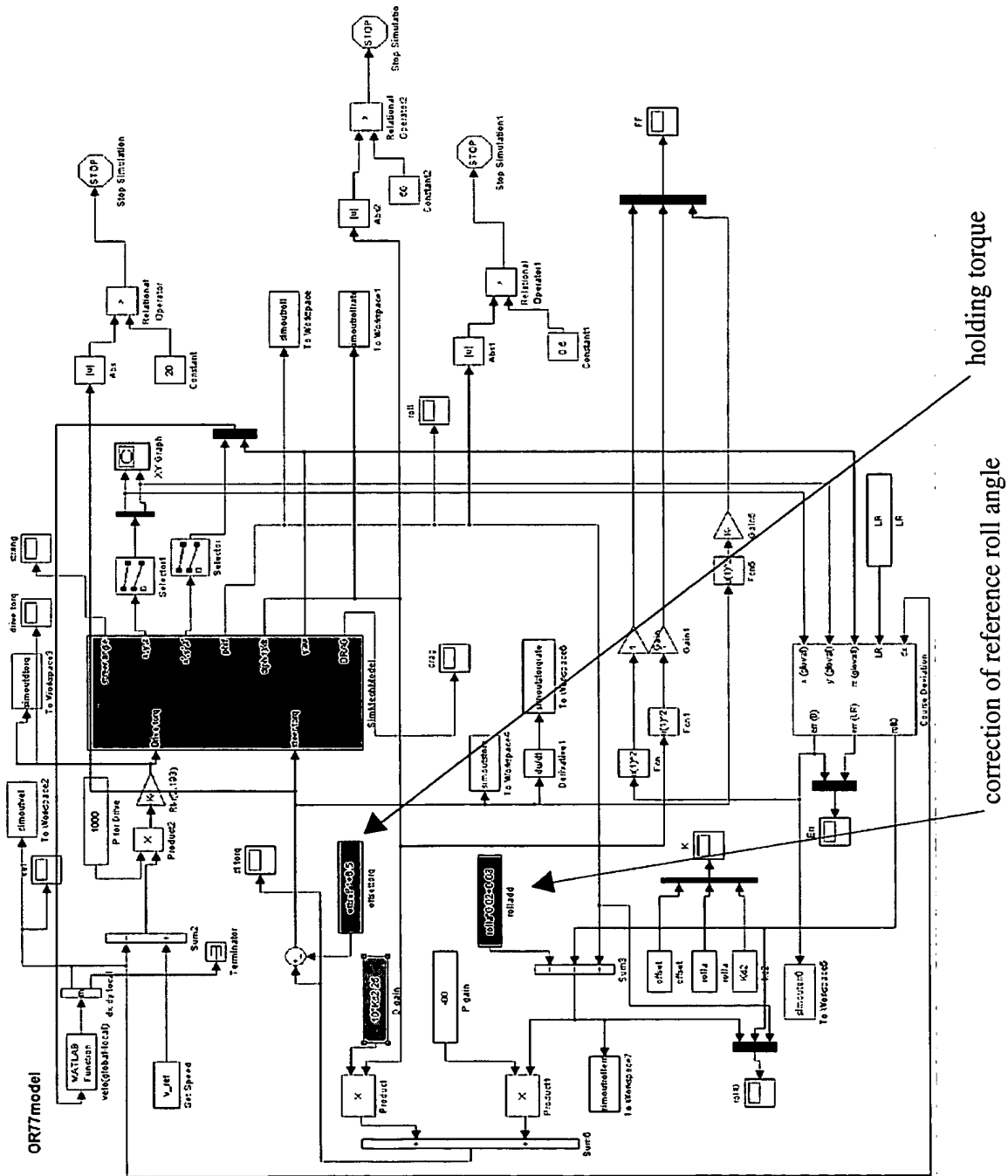


Figure 27



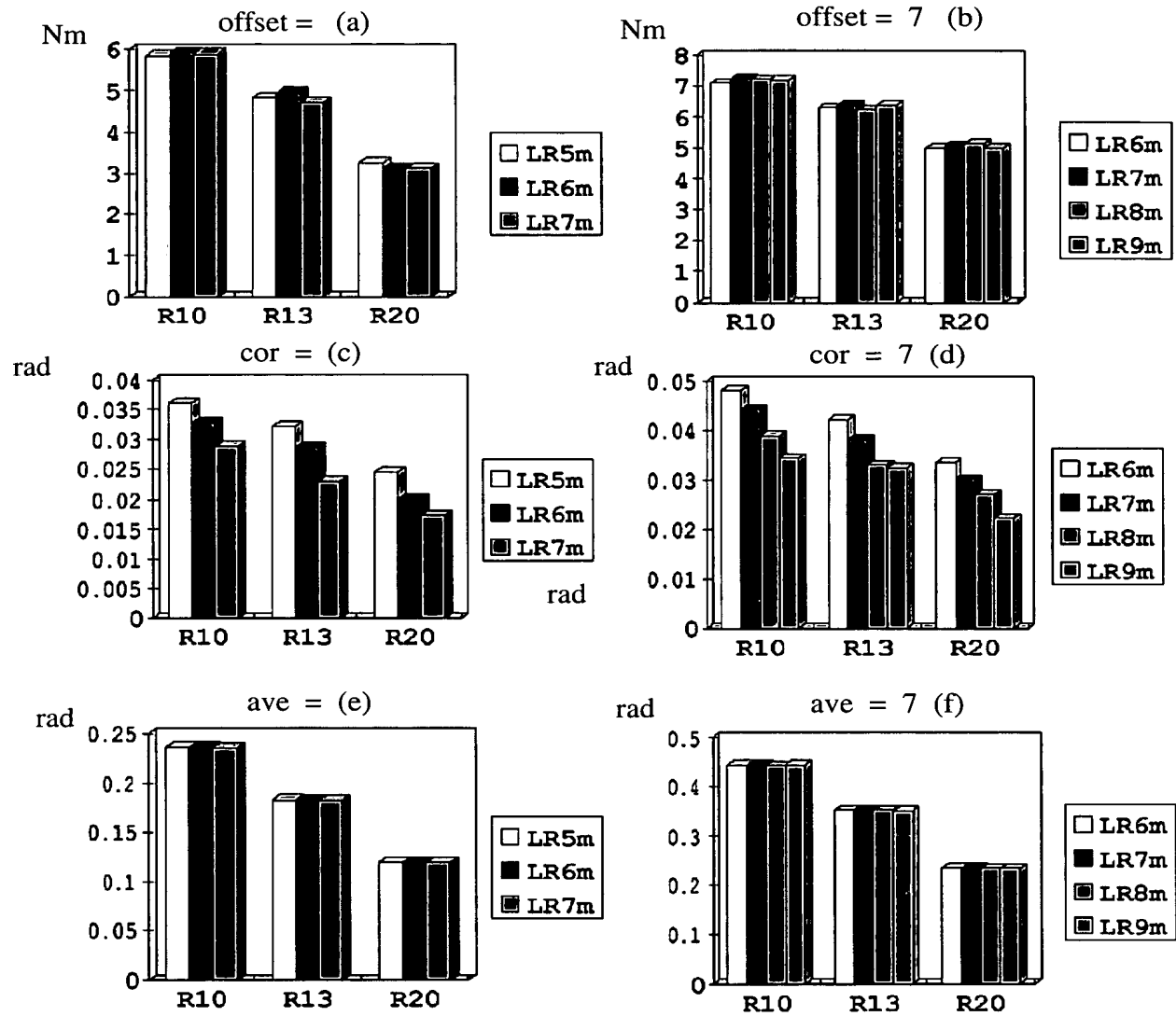


Figure 28 (a-f)

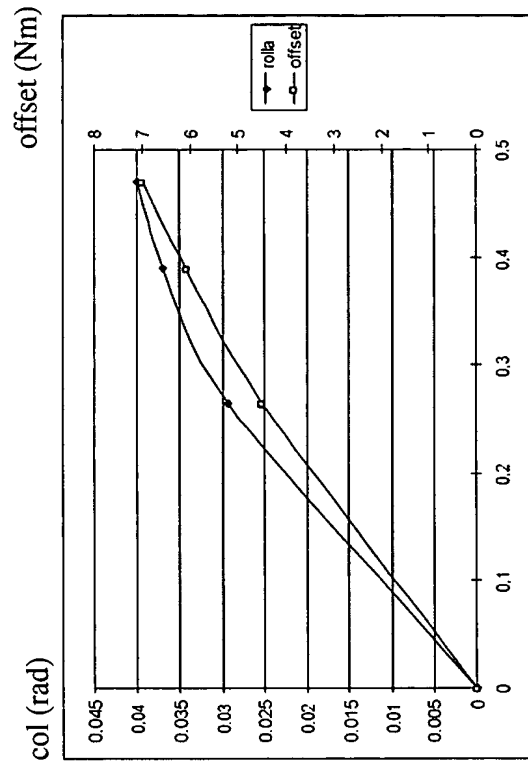


Figure 29B

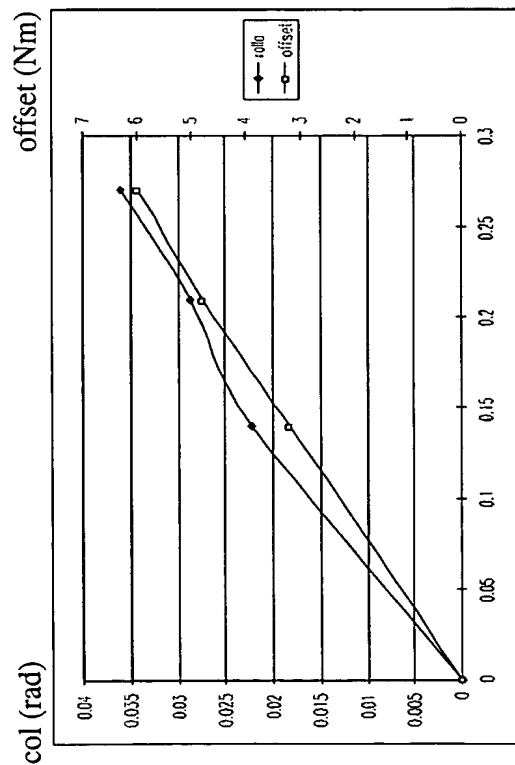


Figure 29A



## Model for lane change simulation

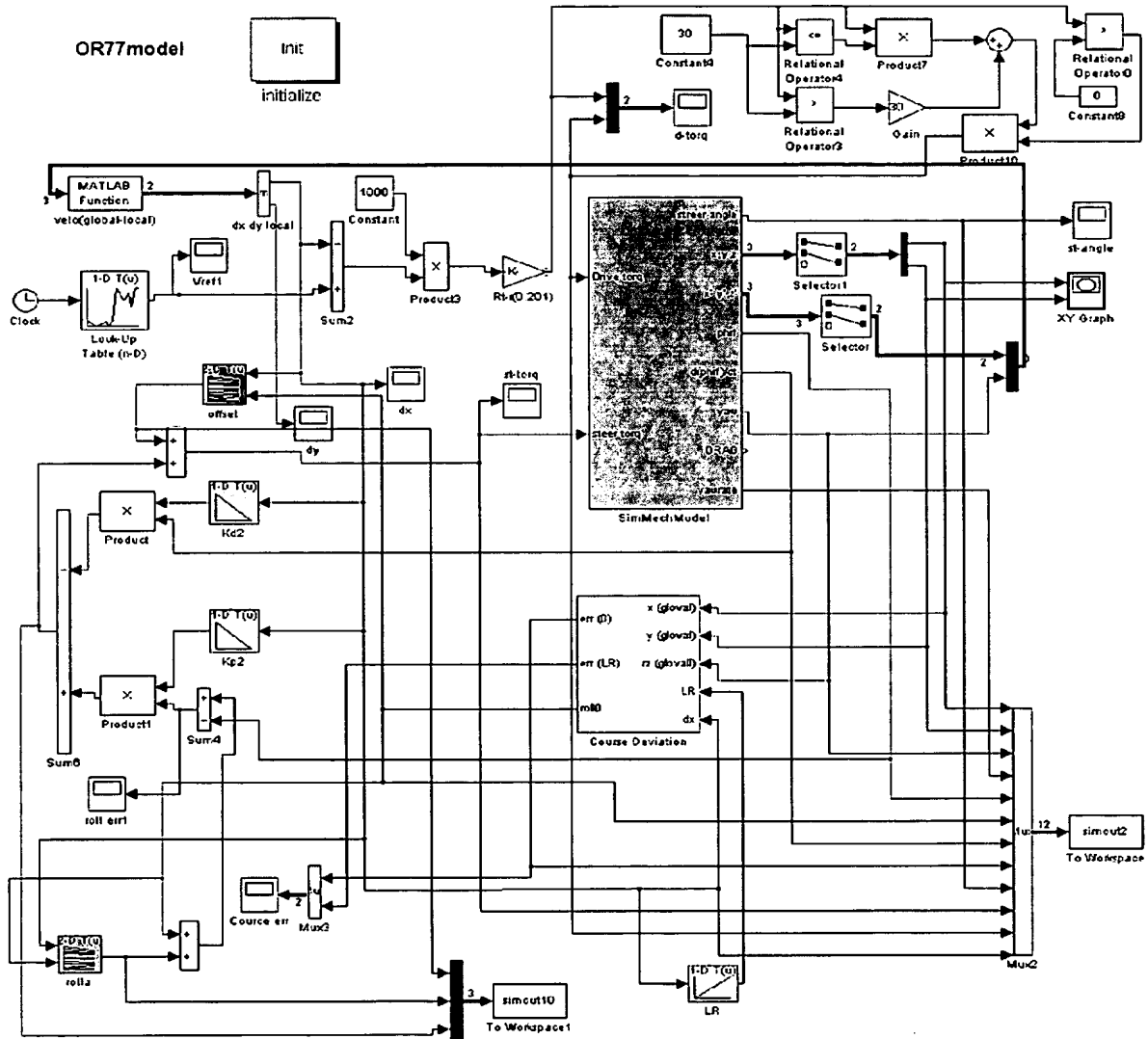
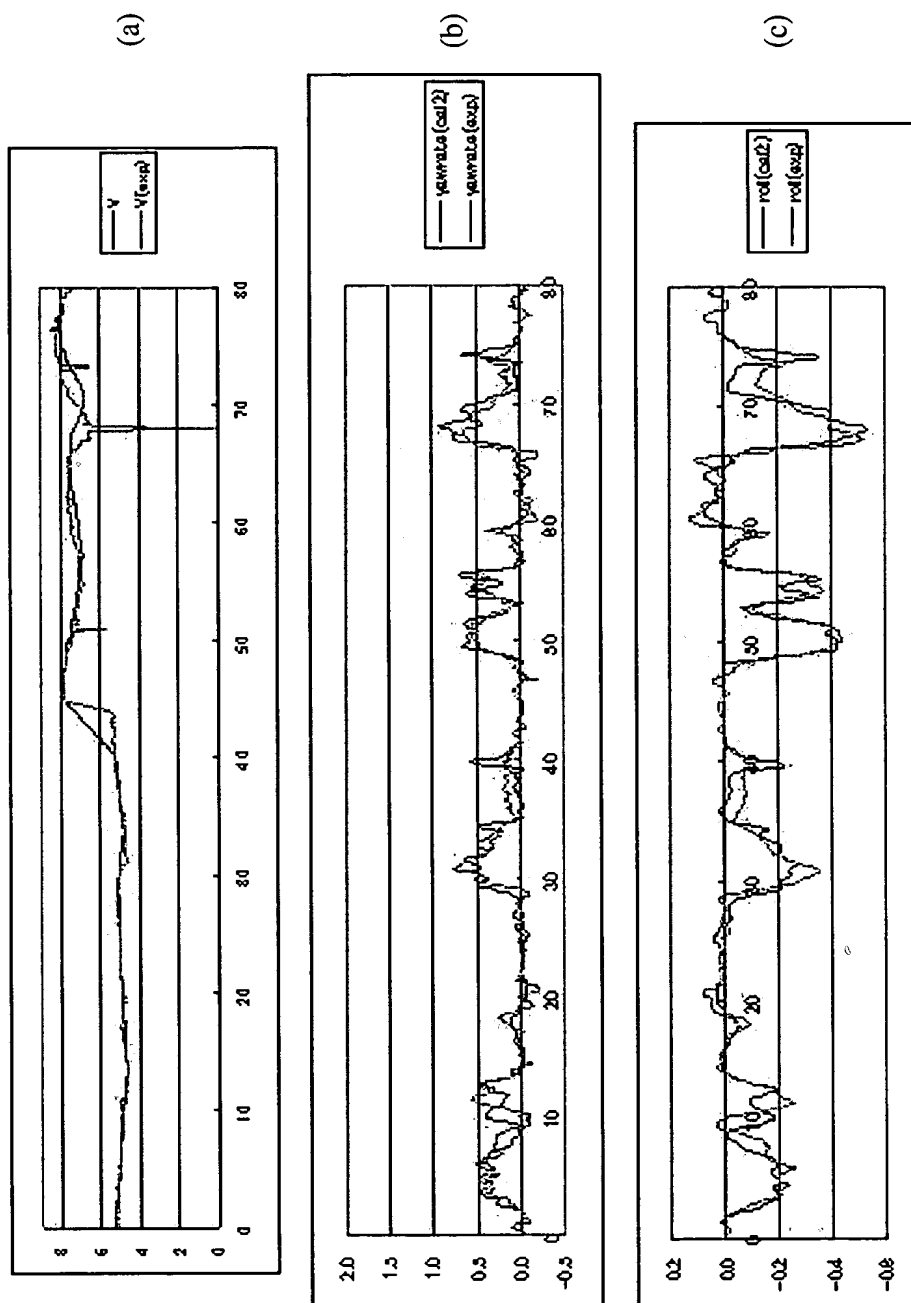
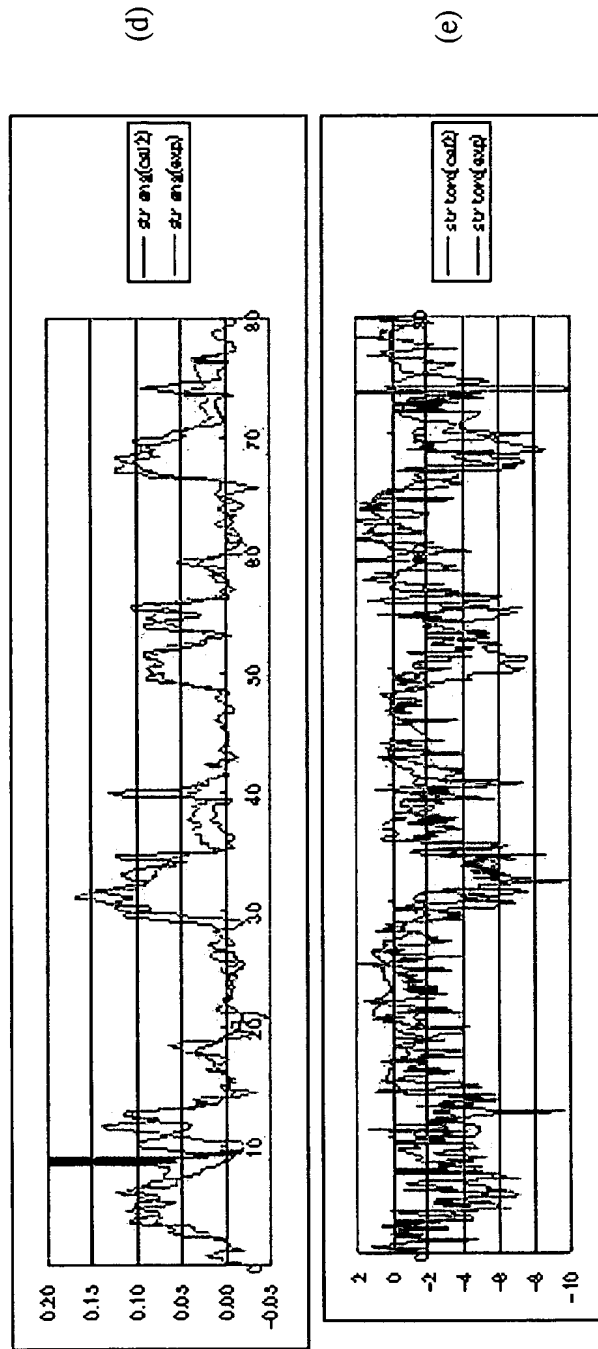


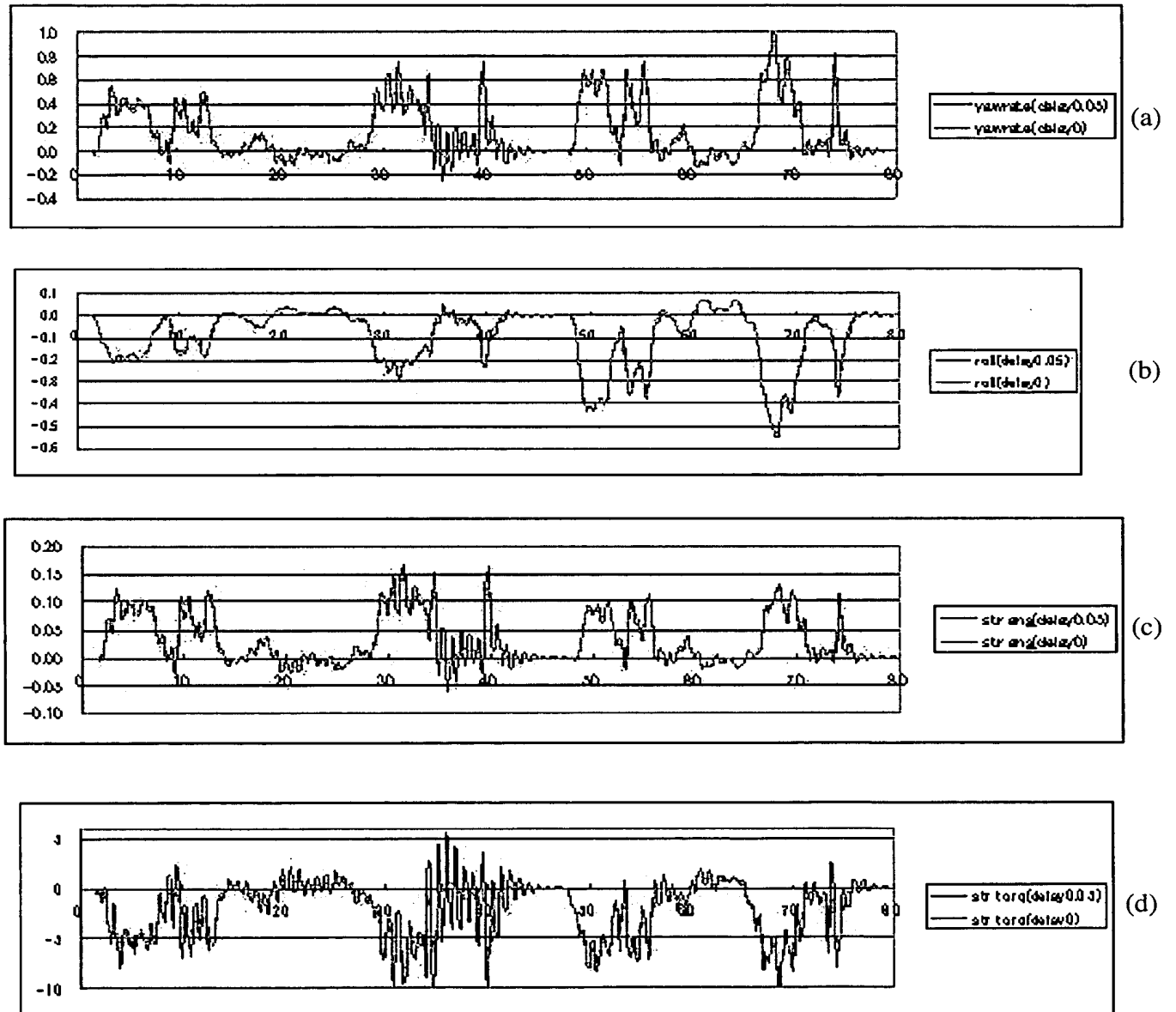
Figure 31



**Figure 32**  
(a-c from above)



**Figure 32**  
(d-e from above)



**Figure 33**  
(a-d from above)

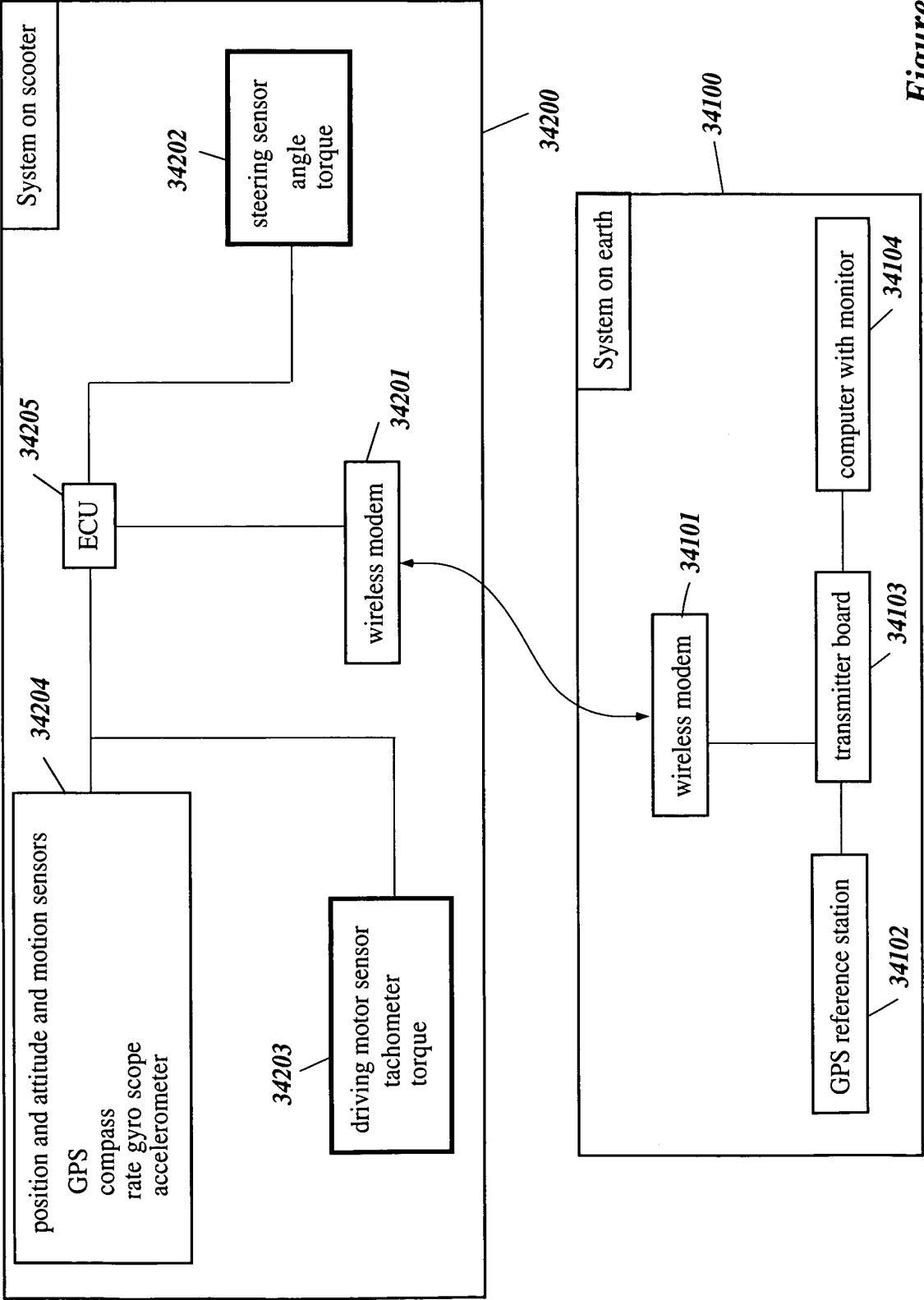
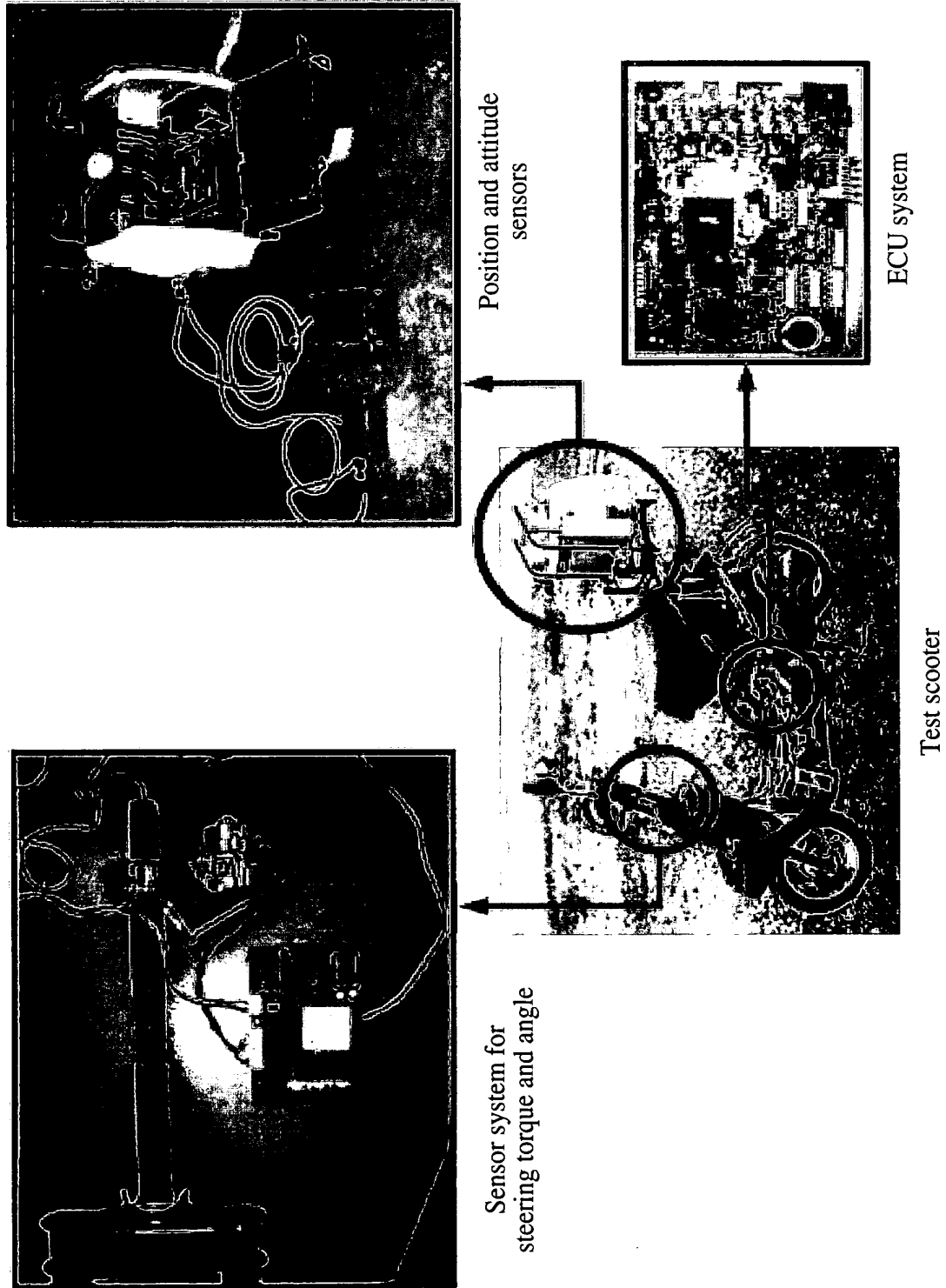


Figure 34





*Figure 35*

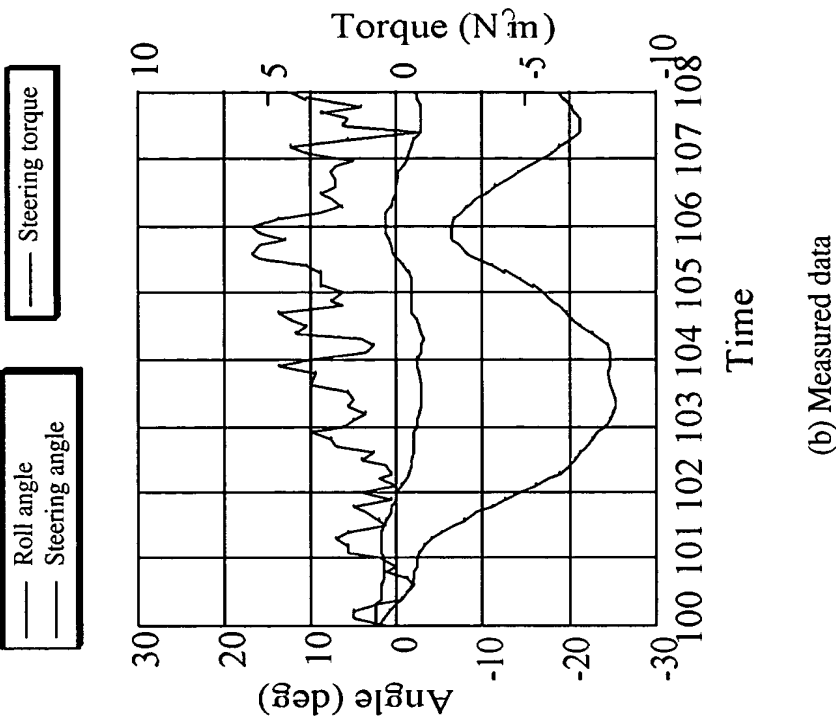
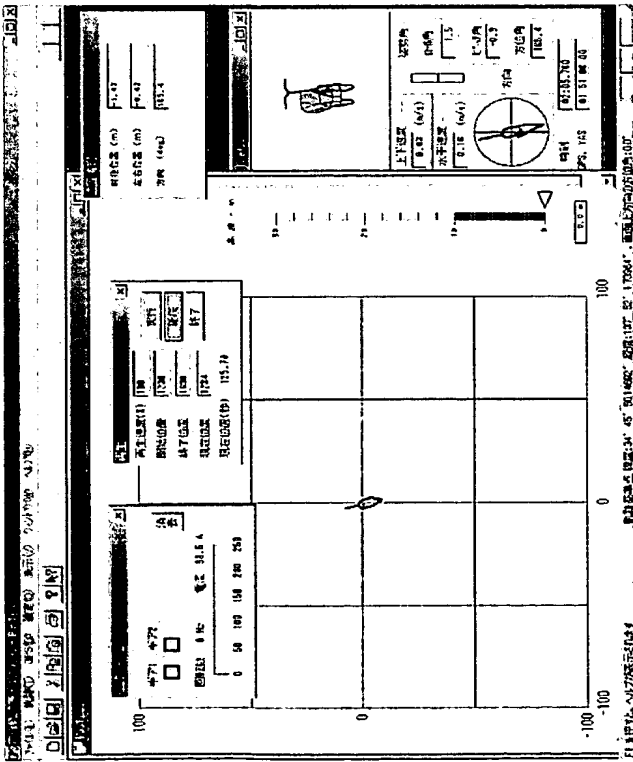


Figure 36



(a) Realtime monitor of position and attitude

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